TESTS: Twin Swirl Turbocharged GS1100, Yamaha XV920, Suzuki RM250X, PE250X, Honda CB400T and Kawasaki KZ650CSR

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OCTOBER 1981
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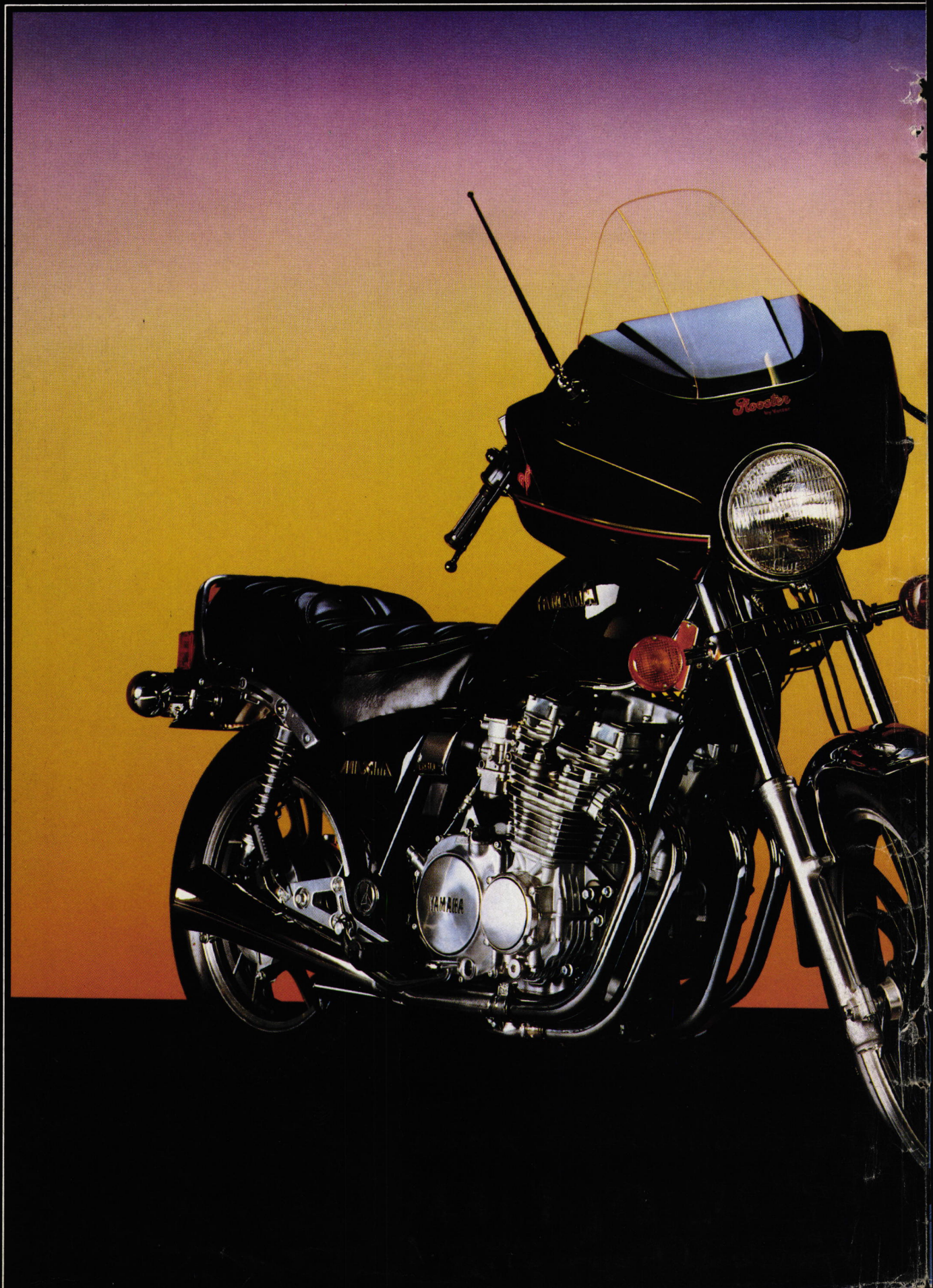
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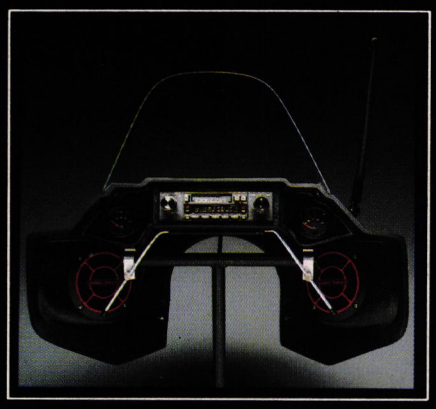

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ON THE COVER:
Shown at rest is the Twin-Turbo GS1100, the perfect home companion for the suburban commuter. You can live up to 172 miles from work and still arrive within the hour.
Photo by Larry Gatz.

QUOTE:
"A skittish motor-bike with a touch of blood in it is better than all the riding animals on earth."
Pg. 54

Contributors
Patrick Behar, Chris Eastman, Don Fuller, Larry Gatz, Dain Gingerelli, Torrey Heeb, Vic Huber, Doug Jackson, George Larson, Tom Riles, Mark Wagner, George Wegner, Terry Whytal

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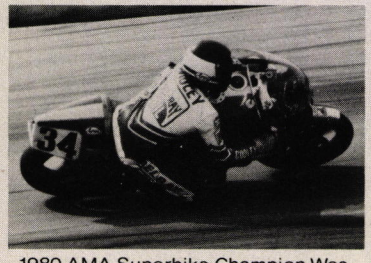

1980 AMA Superbike Champion Wes Cooley on the Yoshimura Suzuki

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OFF-ROAD

MAKE & MODEL	ISSUE	ENGINE TYPE	WHEEL TRAVEL, IN. FRONT/REAR	WEIGHT, LBS	HORSEPOWER @ RPM*		GEARS
Can-Am 250 MX-5	Jan. '79	Two-str.	10.8/10.0	218	32.1	8500	5
Can-Am 250 Qualifier III	Feb. '80	Two-str.	9.7/9.8	230	25.2	8000	6
Cam-Am 400 MX-6	June '80	Two-str.	11.5/10.8	233	38.3	6500	5
Honda CR125R	April '81	Two-str.	10.6/11.5	213	NA	NA	6
Honda CR250R	May '80	Two-str.	11.8/11.0	222	27.5	7000	5
Honda CR450R	Feb. '81	Two-str.	11.0/12.5	236	NA	NA	4
Honda XR200R	Sept. '81	Two-str.	9.0/10.2	228	NA	NA	6
Honda XR500	May '79	Four-str.	8.5/8.6	273	25.8	6500	5
Husqvarna 125CR-'80	Nov. '79	Two-str.	11.8/11.8	214	18.8	11000	6
Husqvarna 250WR	July '81	Two-str.	9.5/10.3	248	20.9	7500	6
Husqvarna 420AXC	Oct. '80	Two-str.	11.5/11.9	239	NA	NA	4
Husqvarna 430CR	March '81	Two-str.	11.9/11.3	239	33.3	6500	6
Kawasaki KDX250	July '81	Two-str.	9.9/11.0	248	24.3	7000	6
Kawasaki KDX175	Dec. '80	Two-str.	9.6/9.8	222	15.3	8500	6
Kawasaki KX125 A7	Jan. '81	Two-str.	10.4/11.3	207	20.9	12000	6
Kawasaki KX250	Sept. '80	Two-str.	11.3/11.2	233	26.8	8000	5
Kawasaki KX420	July '80	Two-str.	11.0/11.3	250	34.0	7000	5
Maico 400 MI	April '80	Two-str.	12.3/12.0	233	35.5	7000	5
Maico 450 MI	April '80	Two-str.	12.3/12.0	236	37.0	7000	5
Montesa Cappra 414 VE	Oct. '79	Two-str.	10.9/10.7	236	28.5	6500	4
Suzuki PE400	Nov. '80	Two-str.	11.3/11.3	250	30.9	7000	5
Suzuki RM125X	June '81	Two-str.	10.8/11.7	205	20.7	11500	6
Suzuki RM250N	May '79	Two-str.	11.2/11.8	218	27.1	8000	5
Suzuki RM465X	Aug. '81	Two-str.	10.4/10.8	234	36.0	7000	5
Yamaha Pro-Tec 600	Nov. '79	Four-str.	10.5/10.1	262	46.2	6500	5
Yamaha IT250G	Dec. '79	Two-str.	9.8/9.8	244	27.7	8000	6
Yamaha TT250G	Aug. '80	Four-str.	8.8/7.5	242	17.7	8000	5
Yamaha YZ250G	March '80	Two-str.	11.2/11.6	217	29.6	8000	6
Yamaha IT465	May '81	Two-str.	10.0/11.4	247	38.1	6500	5
Yamaha YZ465H	Aug. '81	Two-str.	11.0/12.4	235	39.8	7000	5

*Horsepower shown is taken at the rear wheel and does not account for transmission losses between the engine and rear wheel. These results may differ from manufacturer's claims or from results obtained using a different dynamometer.

STREET

MAKE & MODEL	ISSUE	ENGINE TYPE*	QUARTER-MILE, SEC./MPH	TOP SPEED, MPH	WEIGHT, LBS	FUEL CONSUMPTION, MPG	STOPPING DISTANCE FROM 60 MPH, FT.
BMW R65	March '81	2C/G	14.16/92.1	110	423	45-50	133
BMW R100RS	May '81	2C/G	13.48/98.4	127	492	34-52	145
Ducati Darmah	Sept. '78	90-deg. 2D/F	13.41/97.5	118	487	25-40	120
Dunstall-Suzuki GS1000 CS	July '79	4A/F	11.32/117.0	154	488	37-54	124
H-D CLE Sidecar	Sept. '79	45-deg. 2D/F	17.60/69.3	91	1036	25-35	181
H-D Tour Glide	Sept. '80	45-deg. 2D/F	15.58/83.9	108	785	35-44	161
Honda CB400T Hawk	March '80	2A/F	14.37/88.6	100	391	51-65	139
Honda GL500 Interstate	Aug. '81	80-deg. 2E/G	14.88/86.4	96	517	39-53	140
Honda CX500 Turbo	Sept. '81	80-deg. 2E/G	NA	136	549	NA	NA
Honda CB750F	June '81	4A/F	12.40/108.3	118	526	38-53	126
Honda CB750C	Nov. '80	4A/F	12.68/105.3	128	530	39-46	131
Honda CB900F	July '81	4A/F	12.21/111.1	141	547	41-47	130
Honda GL1100 Interstate	Aug. '81	4C/G	13.37/99.7	130	691	39-44	148
Honda CBX	May '81	6A/F	12.01/113.9	136	646	23-40	130
Kawasaki KZ440D	Feb. '81	2A/F	14.59/89.1	107	383	56-64	135
Kawasaki KZ550	Sept. '80	4A/F	13.45/97.1	103	426	37-51	150
Kawasaki GPz550	Sept. '81	4A/F	12.97/101.7	119	449	52-63	149
Kawasaki KZ750	June '81	4A/F	12.43/108.2	128	471	38-60	128
Kawasaki KZ1000J	Feb. '81	4A/F	11.62/116.3	130	521	30-51	135
Kawasaki KZ1100	April '81	4A/F	11.62/117.6	140	559	38-44	NA
Kawasaki GPz1100	July '81	4A/F	11.44/118.6	133	538	38-47	158
Kawasaki KZ1300A GT	Sept. '80	6A/G	12.71/107.4	135	730	31-45	146
R.C. Turbo CB750F	Oct. '80	4A/F	11.99/113.8	NA	523	27-39	135
Suzuki GS450 ST	May '80	2A/F	14.09/92.5	100	397	55-57	127
Suzuki GS750EX	June '81	4A/F	12.26/108.6	128	525	44-52	130
Suzuki GS1000E	Aug. '80	4A/F	11.98/113.9	136	528	32-50	137
Suzuki GS1000G	Aug. '80	4A/G	12.34/110.8	139	564	30-51	141
Suzuki GS1100EX	July '81	4A/F	11.36/118.6	141	535	43-48	123
Triumph Bonneville Special	July '79	2A/F	13.94/96.2	110	411	45-55	175
Yamaha RD350LC	Dec. '80	Two-str. 2/AF	13.23/101.0	113	328	NA	126
Yamaha XJ550RH Seca	May '81	4A/G	12.99/101.7	121	418	44-55	119
Yamaha XJ650 Maxim I	June '80	4A/G	12.60/107.4	120	453	40-54	128
Yamaha XJ650	Nov. '80	4A/G	13.19/102.4	125	476	43-44	NA
Yamaha Seca 750	June '81	4A/F	12.26/108.0	128	495	44-56	134
Yamaha Virago	March '81	75-deg.2D/G	13.28/99.8	105	481	47-51	132
Yamaha XS850LG	Feb. '80	3A/G	13.10/101.7	116	548	42-55	144
Yamaha XS1100LH	Jan. '81	4A/G	11.99/113.5	130	562	41-46	133

*A-Transverse Vertical, B-Vertical, (single-cylinder only), C-Horizontally Opposed, D-Tandem Vee, E-Transverse Vee, /F-Chain Final Drive, /G-Shaft Final Drive, /H-Belt Final Drive

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ADVERTISING: See SRDS. Send copy and instructions to Advertising, Cycle Guide Publications, Inc., P.O. Box 6040, 1440 West Walnut Street, Compton, California 90224. Telephone (213) 638-6178.

SUBSCRIPTION SERVICE: Forms 3579 and all subscription correspondence should be addressed to Cycle Guide Reader Service, P.O. Box 267, Mount Morris, Illinois 61054.

SUBSCRIPTION RATES: United States: $9.00 one year, $16.00 two years, $21.00 three years. In Canada, add $2.00 per year, all other countries add $3.00 per year. Single copy rate $1.25.

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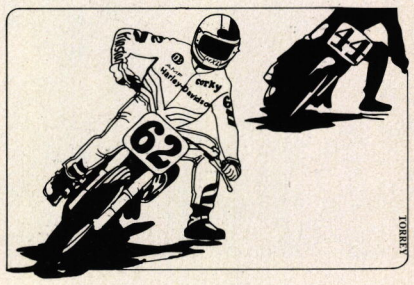

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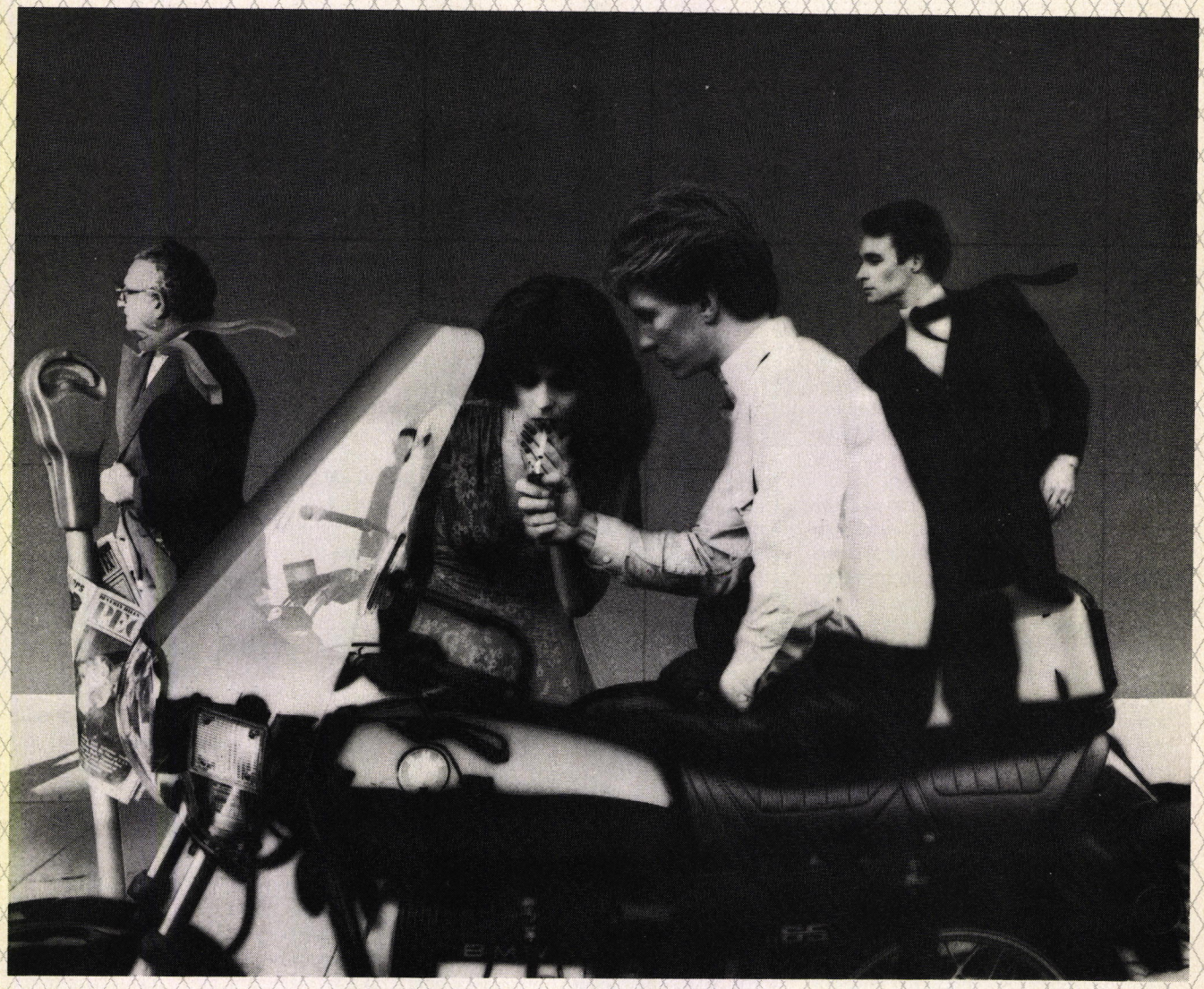

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RIDE SAFELY. ALWAYS WEAR A FULL-FACED HELMET AND APPROPRIATE RIDING APPAREL.

Editorial

Dressing The Part

Moto-fashion for the clothes-minded.

• There are reasons beyond the obvious for selecting your riding gear as carefully as you choose the kind of bike you want to ride or the people you ride with.

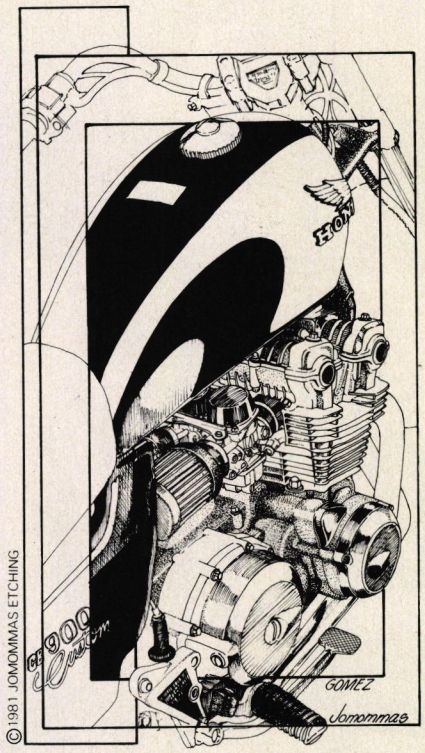
Of course, the obvious reasons got obvious in the first place by being the ones that you address most frequently. And the reason that you're faced with most often for dressing the part of a motorcyclist is that you're regularly hung out in the windstream confronting nature. Daily you're assaulted by sun, windburn, wind chill. And often you get to ride through rain, cold, heat—the whole of human exposure in one concentrated lump. Like living in a weather map. And so, you shield yourself from the elements.

As you well know, beyond the weather there are other considerations peculiar to motorcycling. Riding a bike tends to place you in an adversary relationship with your immediate environment. Insects dive-bomb you as you ride. Semis shoot gravel at your body with phenomenal accuracy. And there is always the possibility that as the consequence of a moment's inattention—your own or someone else's—you'll end up sliding down the road. Even the breakup of some subtle mechanical relationship in the motorcycle beneath you can make you intimate with the pavement in less time than it takes to tell. Recognizing this, you exercise your option to pad and protect your body as best you can against the loss of its own natural covering.

And because that adversary environment in which you submerge yourself whenever you ride contains people directing heavy objects hurtling at high speeds, you can use your riding gear as a last resort to remind those people that you are sharing the available space with them. If conveying that message is important to you, you choose bright colors and reflective striping to remind them of your presence.

Finally, because the way you look when you ride your bike is important to you, whether on a conscious or subconscious level, you choose riding gear that makes a statement of identity that pleases you. It could be that the style you choose integrates bike and rider into one complete package. Or maybe you choose to broadcast another message altogether.

Pretty obvious, as I said. But there's another function to be figured into the deal when you make your choice. It's



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another kind of conspicuity, and you can also count it as protection—self-protection.

I got a full measure of the conspicuous/protective qualities offered by modern riding gear on a ride to Laguna Seca recently with my wife and Associate Editor Ron Lawson. As we rode up the freeway, a CHP patrol car appeared practically out of the weeds at the side of the road. The patrolman motioned us to pull over and took our licenses. We waited patiently as he went through the ritual calling-in of the numbers, waited somewhat less patiently as he explained that for the moment there was no charge against us but that we were not free to leave. Another patrolman a distance down the road had radioed him to hold the first two motorcyclists who rode by. We had ridden by. He had stopped us.

Eventually, the second patrolman arrived. With admirable detachment he explained that a driver had reported two motorcyclists kicking in the door of his car, and that we were being detained until the driver showed up.

When he did, the damage to the door of his shiny Mercedes was obvious. So was his intention to squarely place the blame. He had reported two motorcyclists, and there were two motorcycles parked at the side of the road. And we were motorcyclists. To him, that was damning evidence.

Two things interrupted the smooth flow of his identification, our swift incarceration and our eventual legal representation. I was wearing them. His eyes flicked to the XV920 and GPz550 that Lawson and I were riding. I watched him see them as sinister, outlaw bikes. My wife, still seated primly atop the Yamaha, became a biker's woman—with all the attendant societal ramifications that he could dredge up. Poor Lawson, a fresh-faced 22 years old and given to escorting elderly ladies through crosswalks, turned into a leering, knuckle-dragging goon chuckling at the near destruction of the man's car.

The driver's eyes hardened. By God, motorcyclists had cost him, frightened him, inserted themselves forceably into his life, and now motorcyclists were going to pay. He wanted this problem tied up neatly and quickly—and we were the solution. He wanted so badly to savor the sight of two motorcyclists being hauled off to the hoosegow that I could taste him taste it. But.

But I stood there outfitted in the best from Bell and Bates in vivid yellow and green, looking for all the world as villainous as a grapefruit salad. And about as forgettable as a shift pattern. Because of my gear, there was simply no way to confuse me with any other rider. He kept looking away from me—tried to look away from me—but be kept glancing back. Eventually he talked to the patrolmen briefly, got into his car and left. After keeping us a suitable waiting period to allow the man to put some miles between himself and us, the patrolmen announced that we could go. The driver couldn't "positively identify" us.

You can call it a fluke if you want to. Maybe my like-no-other riding gear had nothing to do with it. But I don't think so. As far as I'm concerned, the social implications of selecting riding gear to emphasize personal conspicuity extend far beyond simply stylishly coordinating the look of bike and rider. There are still people out there who think it is open season on motorcyclists. And in dealing with them, a bit of protective coloration can sometimes keep you off of the endangered species list.

—Larry Works

Coast to Coast Clothing

Whether it's ocean to ocean, or just over to the next county, a brisk weather trip can turn you into an icicle before you hit the on ramp. But warm, comfortable Malcolm Smith Touring Wear provides the features experienced and knowledgeable riders demand.

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Picture deep rich glossy metallic paint. And tastefully applied chrome to set it off.

And gracefully integrated pull-back handlebars, a sleek teardrop tank and a low slung saddle.

Plus functional aluminum-alloy ComStar™ wheels and fat tubeless tires with raised white letters.

And four gleaming megaphone pipes in the back to tell the world that you're coming down the road.

Now look on the left hand page to see if your imagination is as good as Honda's.

You get what you pay for. Performance.

But looking at a motorcycle is only half the fun.

The other half is riding it.

Press the electric starter of the CB650 Custom and listen to the engine.

It's a 627 cc classic Honda four-stroke, four-cylinder engine—legendary for power and reliability.

Complete with a compact automotive style alternator to reduce engine width for extra cornering clearance.

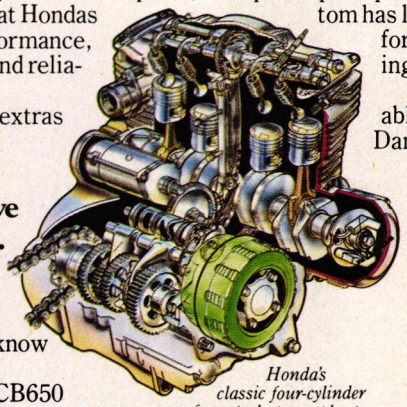
New for this year, it's hooked up to four 26 mm constant velocity carburetors and an accelerator pump for smoother throttle response. And less throttle return spring pressure.

The handling complements the powerplant perfectly. The CB650 Custom has leading axle air-adjustable forks with Syntallic™ bushings up front.

And five-way adjustable Variable Hydraulic Damping™ shocks in back.

All in all it's a package that allows you to arrive in style.

And arrive early.



Honda's classic four-cylinder four-stroke powerplant.

Less tinkering, more riding.

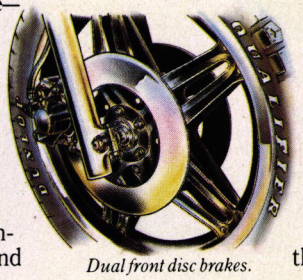
There's more than one way to pay for a motorcycle.

Because after you buy it, you've still got to maintain it.

And that's where the CB650 Custom may have another advantage.

After more than a decade of building four-cylinder motorcycles, Honda has had plenty of practice making them as trouble-free as possible.

The CB650 Custom's ignition is a transistorized design that does away with points and the servicing that goes with them.



Dual front disc brakes.

Unlike spoke wheels, Honda's ComStars never need tightening or truing.

The dual disc brakes up front need no routine adjustment either. Because they're self-adjusting.

Even the chain has been designed to reduce fiddling. It's a high performance #530 sealed "O" ring that's internally lubricated.

When there is work to be done, many owners find that it's easy to do yourself. Take adjusting the valves, for instance.

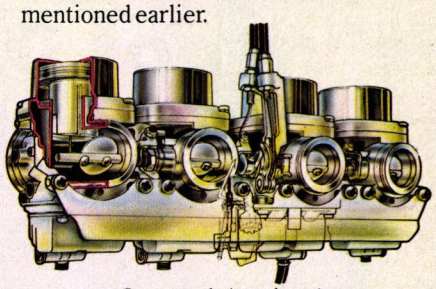
Instead of requiring an expensive trip to the shop, it can be done with a couple of wrenches, and a feeler gauge at home.

And at no additional charge...

With the price you're paying for all this beauty and performance the last thing you expected was extras, right?

Wrong.

The CB650 Custom comes with the dual front disc brakes that were mentioned earlier.



Constant velocity carbs and an accelerator pump for smooth response.

And vibration-resistant mirrors and vibration-resistant passenger footpegs.

Plus a halogen headlight and full instrumentation.

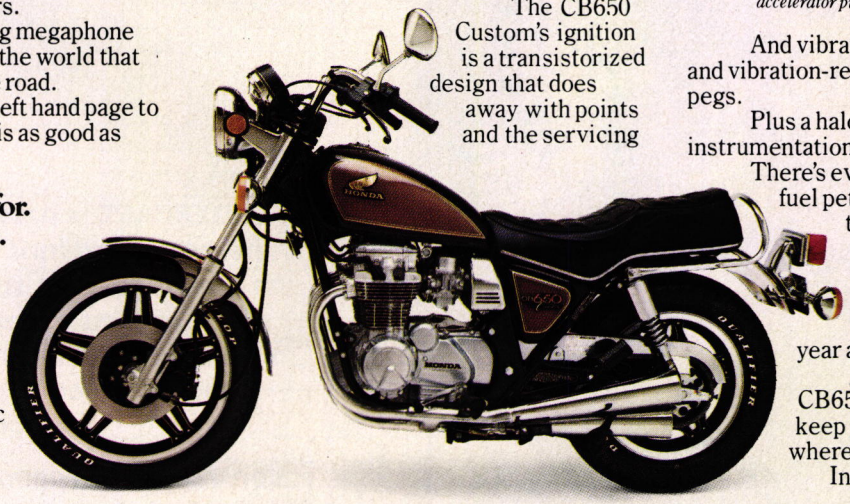
There's even a vacuum-operated fuel petcock that you never have to remember to turn off.

Which brings us to the best feature of all.

The kind of gas mileage you'll be thankful for year after year.

Just one more way the CB650 Custom can help keep your bank account where it belongs.

In the bank.



HONDA

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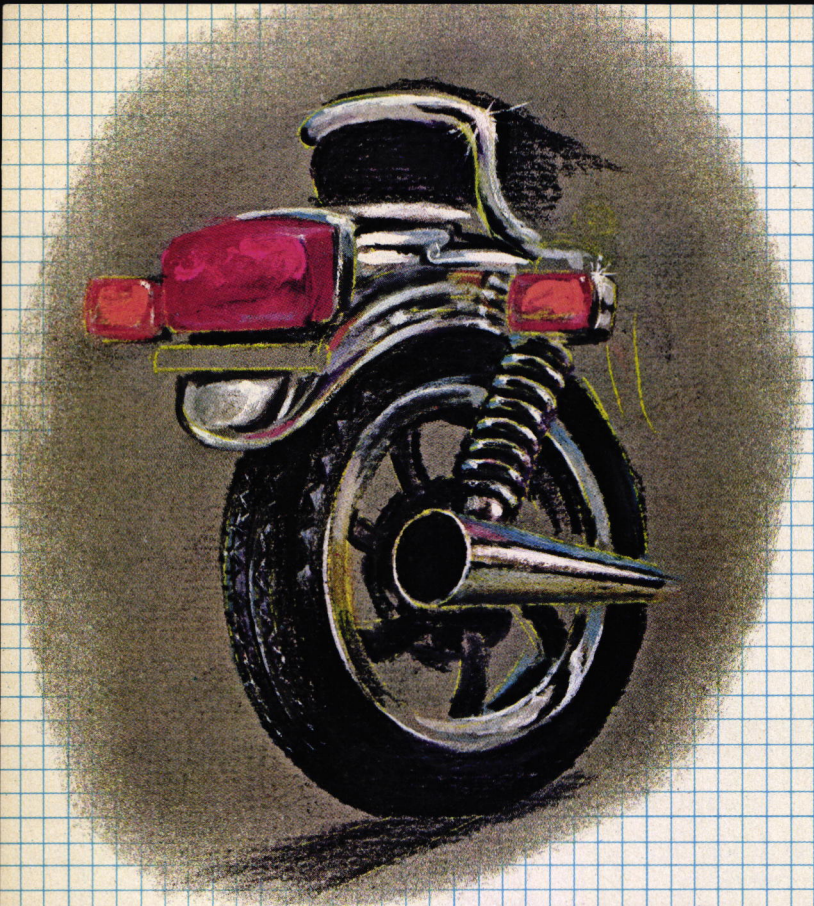
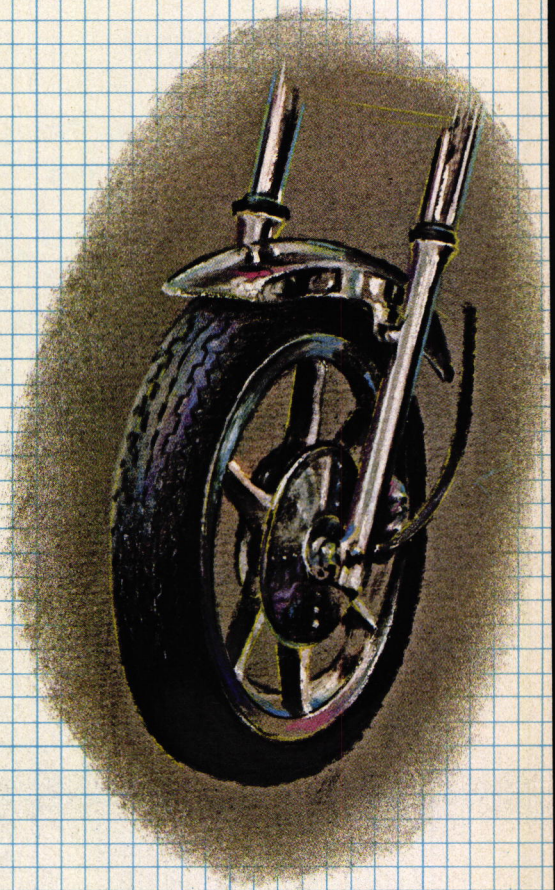
at INTERPART





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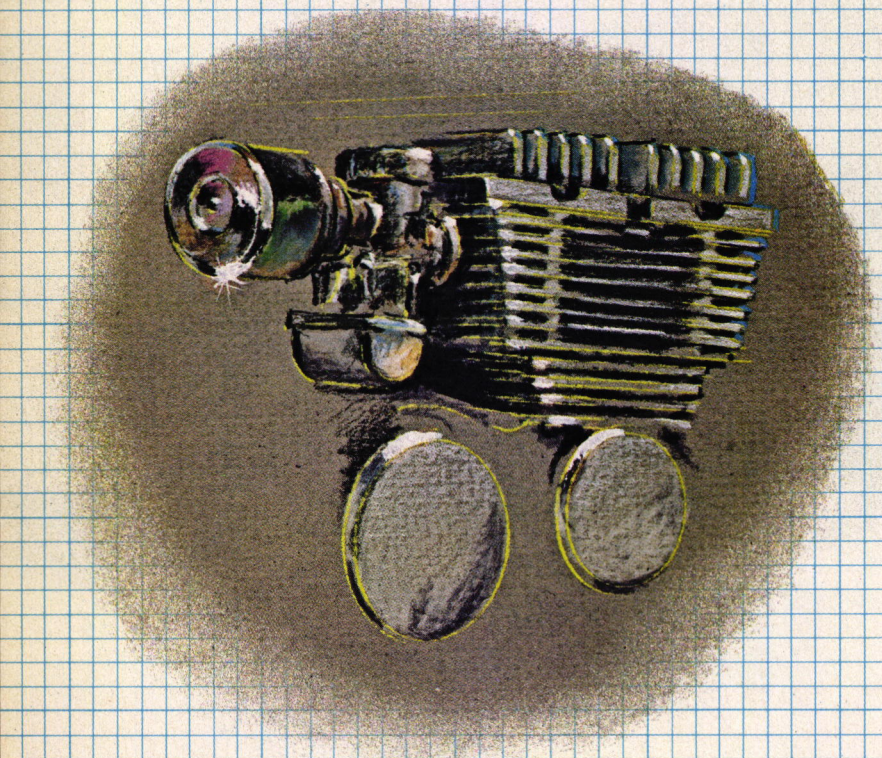

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Thompson at Large

Hung Off

But you don't get the Look without the Stuff.

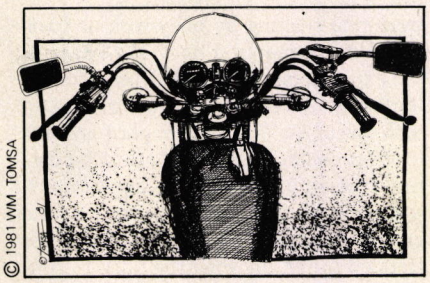
• The kid on the brand-new Honda CB750F who passed me on the blind, decreasing-radius righthander on my favorite test road didn't annoy me because he did it in a dangerous, silly way—uphill against unknown traffic and over a double-yellow line—but because, frankly, he did it very badly.

I was wobbling along on Steve Young's Turbo Shadow sidecar, trying to get the feel of the thing with the rig's owner in the chair, and had noted the kid on the side of the road a few turns back, chatting with what were presumably his buddies, although they seemed to be mounted on Yamaha Specials. A quick glance at his bike and his outfit told some of his story—shiny-new silver F-model, highback rack, no license plate yet; the rider wearing a cheapo helmet, tennis shoes, a red windbreaker, no gloves—but it took his pass to sketch in the details. See, when he jerked around me in that bend, he went across the double-yellows in what he no doubt thought to be the best Freddie Spencer style: He hung off and gassed it.

Or at least that's what he tried to do. In fact, the kid squeezed the gas tank with his knees, threw his torso out into the turn as far as humanly possible (and maybe a little further; these SoCal surfer-kids are agile), cranked his head into a weird angle and lurched into the other lane, engine screaming a gear or two too low.

Imagine the scene: Here's a kid trying desperately to put the move on some strange outfit, and when he gets his chance—*shut down, sucker!*—he looks like a paraplegic parody of Paul Smart, circa 1964. In his mind, he was wearing off his boots (sorry, Nikes), grinding underside iron, using up every bit of the road. In fact, he had maybe three inches of daylight between pristine footpeg and uncaring concrete. It was, in short, an awful display of the riding art.

I suppose it was inevitable that with the Superbike racing boom would come a concomitant boom in would-be Superbike stylists; this tradition, after all, goes back far beyond the days of the Ace Café on the North Circular Road in London, further even than the 'cowboys' duking it out on BSA A10s down the famous stretch of three-lane outside Brands Hatch officially named "Death Hill" because of the results of their race-inspired antics. As long as there have been racers, there have been young guys with hot blood who wanted



© 1981 WM TOMSA

the cachet of racerhood without the dedication—who wanted, in other words, the Look without the Stuff. So when this magazine and others ran photos of Superbike racers slid all the way up on the tanks of their sort-of production bikes, knees artfully kissing the tarmac, elbows elegantly askew, shoulders insouciantly slumped, who could doubt that soon America's youth would try it on the road?

Not me. I was just the same, in 1965. Back then, it was the hunch-shouldered, knee-out (but not on the ground) Mike Hailwood look that caught our collective fancy. We struggled mightily to get our Bridgestones and Yamahas and Hawks into just the right position to get the Look, but all it usually got us were sore muscles and occasionally a dinged bike. Part of getting the Look, we found the hard way, was knowing the Stuff—and that came only from experience in racetrack combat.

You hung off, we discovered, only on production bikes, and only then because of two factors: bad tires and bad frames. You wanted to keep that awful open-loop YR1 Yamaha as upright as possible at Vacaville to avoid the Godawful Wobble that would end up with the Final Tankslapper into the big ditch. Hence the body hung down and inside the turn, as low and far as possible.

Grand Prix bikes of the period didn't like this treatment much; the narrow-section Dunlop KR73 and KR77 triangulars that everyone raced on seemed to get squirrelly with the pilot off the centerline of his TD1 or AJS or A1R, so we just slid forward and popped our knees out from behind the flimsy fairings.

Today's Superbikers don't have quite the terrible chassis gremlins, nor do they contend with narrow tires, but the effect of 100-plus ponies spewing out the pipe hands them the same problem, for which their solution is the same as ours was: Keep the sucker up on some decent contact patch by getting the body down and inside. Result: fewer grounded point covers, better tire wear (a big deal on gumballs) and a little spare room if need be, when a suddenly tightened turn is demanded, either by an inside pass or a racer ahead using up the good line.

The kid on the F-model didn't know any of this, or at least he didn't ride as if he did; all he knew was that in order to Look Right, a guy on a silver F was supposed to stick his body into some contortion upon entering the turn. That he chose a method favored by some European early-Sixties racers and a few Japanese aces of the period is not likely a matter of his close perusal of an old copy of Peter Carrick's *History of Motorcycle Racing*. More probably it's due to the strange feeling that getting up off the seat, jumping forward to the end of the tank, hurling oneself down at the ground already menacingly near, dropping one's knee far out and working the throttle, brakes and gearshift all in rapid sequence gives one. This is not an easy matter, this question of Superbike athletics; it takes a while in actual combat before the techniques and the reasons for them become apparent, and, like the proper golfclub grip, which feels wrong at first, demands movements which at first seem utterly unnatural. So the kid's pathetic imitation is understandable.

Still, despite my empathy for the fellow (for, as Moto-Scriptures have it, "Let him cast the first insult who has never done a dumb thing in Turn Four"), his absolute lack of style in search of style irked me so that I almost pulled over to chat with him. My fleeting thought was that I might help a kid grabbing blindly for the Look avoid a few of the more vicious pitfalls of the search. And then he dove into the lefthander up the road, completely off-line, hung-off awkwardly again, and crossed the double-yellows before the *apex*, and I knew it to be a hopeless task. Not only could I never help him with style; the question is, how can you talk sense to a guy who doesn't understand the terrible truth of a blind corner?

You can't, I decided, and after I wrenched the rig around the lefthander I saw the kid on the side of the road, parked and unhurt, rubber-side down. He grinned at me like Kenny Roberts at Barry Sheene as I wrestled the outfit past. Some things never change.

—Steve Thompson

Techspeak

Disc Brakes in the Rain

Flying along in an aquaplane.

• The first thing you learn about disc brakes is that you can't *always* trust them. Most of the time they work just as the designer intended, hauling bike and rider down from elevated speeds. Indeed, the disc brake's ability to dissipate heat and withstand repeated high-speed use makes it an almost perfect replacement for the overworked drum brake.

The disc does have one shortcoming, actually, a major flaw that still plagues it years after the first puck pinched its spinning rotor. Whenever that rotor is covered with water, as it is in even the lightest rain, the hydraulic binder suddenly becomes a greased skid. For the first few seconds of use, the water-drenched puck and rotor cannot make intimate contact. Much like a bald tire on asphalt, the puck aquaplanes on the thin layer of water that covers the rotor. The only way the puck can force through the water is to vaporize it with localized heat caused by friction.

It can take as long as a few seconds for the water to vaporize completely, and while the slow process is taking place braking force is greatly reduced. Anyone who has ridden in the rain knows the heart-stopping feeling as the brake lever and pedal are worked with no apparent result. The automatic rider reaction is to press harder on the pedal, squeezing more pressure into the hydraulic lines in the hope of finding some brakes.

Obvious as the action seems, increasing lever pressure is not always the thing to do. Squeezing the puck tighter against the water-drenched rotor does cause more friction to vaporize the water, but as the liquid film evaporates the suddenly-efficient brake bites too hard for comfort or safety. With the rotor dry, the extra lever pressure is too much for the available traction between tire and wet road. A locked wheel is just a squeal away.

Way back when, reduced bike use in wet weather meant that many riders were not fully aware of early problems with disc brakes. But as the word got around, complaints flooded into the Defects Office at the NHTSA. Early Gold Wings and CB750s were among the most notorious wet-weather brakers—but they were not alone. Suzuki stuck brake-delay-warning stickers to the forklegs of some of its models, and those companies that did not give a warning still suffered the problem even if they did not advertise the fact.

So while car discs, shielded as they are from rain-soaking by bodywork and the wheel itself, required no major changes, the exposed motorcycle disc brake called for further development. Honda came up with one of the first and simplest answers to the problem. Engineers found that cutting grooves in the puck face gave much the same result as tread on a tire. The grooves provide an escape route for trapped water, allowing the puck to contact the rotor more quickly. But while grooves produce a 20 percent improvement in wet-weather braking, the puck wears more quickly. As the groove depth decreases the improvements reduce dramatically. Honda finally found a single groove to be the best compromise between wear and performance.

Not surprisingly, the aftermarket had its answer to the wet-weather braking problem. Cast-iron rotors, as used on cars, were claimed to be superior in the wet to the more common stainless steel rotors found on most Japanese bikes. The increased performance was claimed to outweigh the unsightly rust that accompanies cast iron, but tests by the government-backed Transport and Road Research Laboratory (TRRL) in England showed cast iron to have no real advantages.

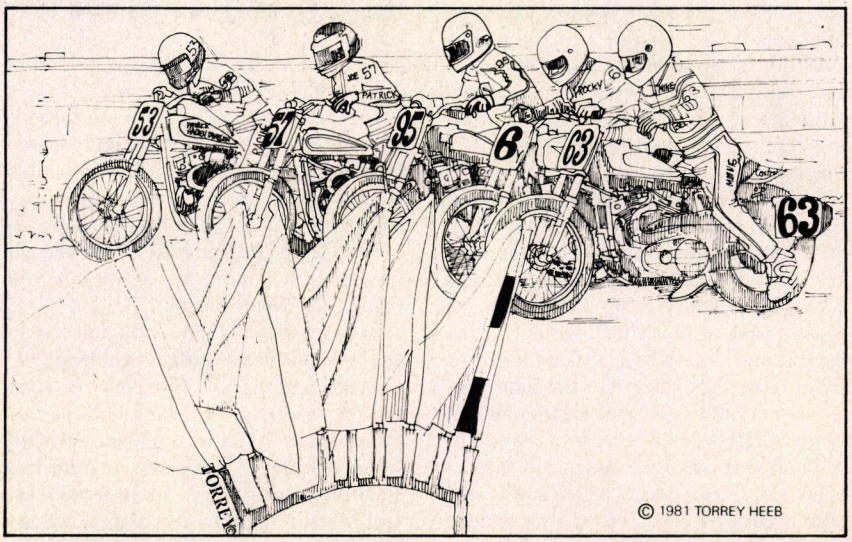
TRRL also examined another popular aftermarket solution: the drilled disc. Laboratory tests showed that any holes in the rotor surface disturb the laminar flow of water as it is centrifuged away. The water level actually increases around the holes and takes longer to vaporize when the brake is applied. Not only does braking distance increase by up to 25 percent in the wet, but the tests showed some adverse effects on dry-weather braking, too.

Another British company, ART, did find one workable solution through machining the disc rotor. Rather than holes, ART cut three grooves like the angled spokes of a wheel into the rotor surface. The grooves not only improve wet-weather braking but also dry-weather stops. But like all grooving and machining solutions to the drenched-disc problem, wear rates are increased.

The major breakthrough in wet-weather performance and long life came with new puck materials. Kawaskai was one of the first users of new sintered-metal pucks while others stuck to organic materials. But tests showed that sintered metal, formed from tiny metal granules compressed into shape under extreme heat and pressure, reduced wet-weather braking distances up to 70 percent. And because the granular surface of the puck wears away by losing tiny metal particles, much like sandpaper, rather than melting and scuffing like most metal parts, the puck retains its efficient braking surface throughout its useful life.

Early problems with squealing and high temperatures in the slave cylinder are things of the past. Sintered metal pucks will soon flood the market and that could be an answer to a long-standing problem. They still won't make disc brakes perfect in the wet, but you will be able to put a lot more trust in them.

—David Dewhurst



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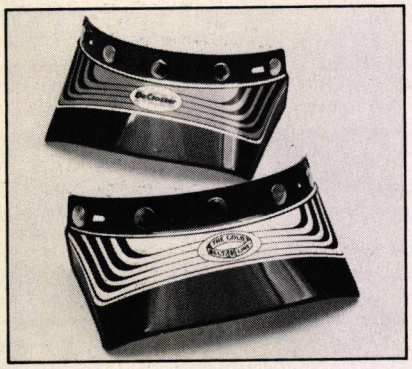
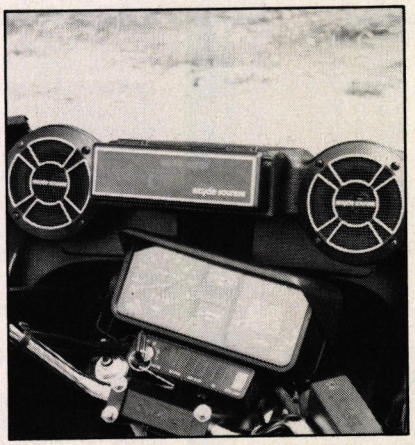
Motomart

A hit and a misc.

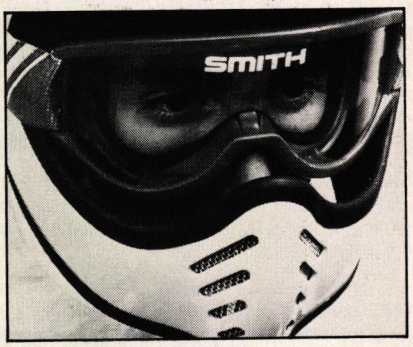
Here's Peeking At You: Gold Belt's Peeker visors now come in new "peeker" graphics designed especially for them. One style sports the Gold Belt logo in a black and yellow combination. The Decrosser MX peeker, on the other hand, comes in red and black. For $3.95, you can keep the sun out of your eyes and look good, too. These visors can be purchased from dealers or directly from The Gold Belt Line, Inc., 7045 Darby Ave., Reseda, California 91335; or phone (213) 705-5689.





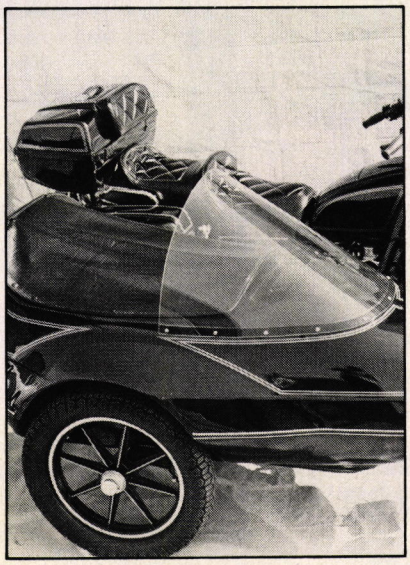
A Home For Your Tunes: Cycle Sound has made two new models of radio housings to fit the Kawasaki 1300A and 1300B fairings. The housing system includes radio cover, Laminar antenna, power supply filter and waterproof speakers. If $74.95 sounds right, contact Cycle Sound Systems, P.O. Box 41, Bulverde, Texas 78163; or phone (512) 438-2211.

Gogglesmiths: Smith's new SMX goggles offer air vents, an innovation that minimizes fogging lenses and provides comfort on muggy days. The goggle's split-nose section provides added comfort and fit without decreasing visibility and the *Lexan* lens is claimed to be unscratchable. The goggles can be purchased in red, yellow or blue frame colors. Made to fit with any full-coverage off-road helmet, the SMX retails for $19.95. Write The Smith Goggle, Box II, Ketchum, Idaho 83340; or phone (208) 726-4477.

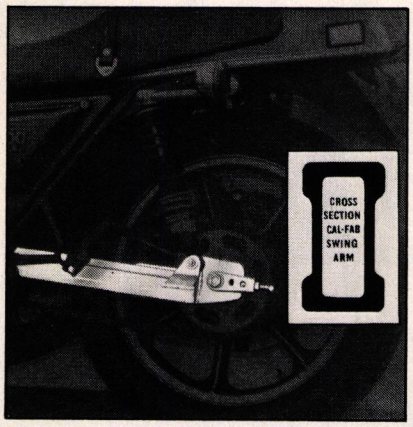


Get Up And Go: KV Products' new Dyna S Electronic Ignition makes sure that you go. This new ignition system can replace points systems or factory electronics on most Honda, Kawasaki and Suzuki Fours. The Dyna S is a self-contained unit; this means it eliminates condenser, points and most timing-related problems. The magnetic Hall Effect timing sensors can be adjusted to suit each particular bike. The ignition comes with color-coded wires and detailed instructions for easy installation. For more information write KV Products, 1060 E. Cypress St., Covina, California 91724; or phone (213) 967-3786.

Winging It Together: California Sidecar has made a matching burgundy-colored and pinstriped sidecar for Honda Gold Wings. The sidecar has a tonneau cover, windshield, black mag wheel and mounting hardware. The manufacturer asserts that the sidecar can be removed or reinstalled in a matter of minutes, with no realignment necessary. For more information contact California Sidecar, Inc., 1630 Oregon Ave., Long Beach, California; or phone (213) 437-0558.

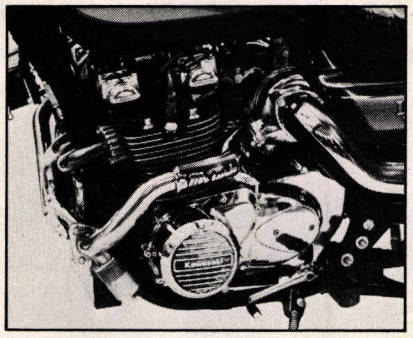


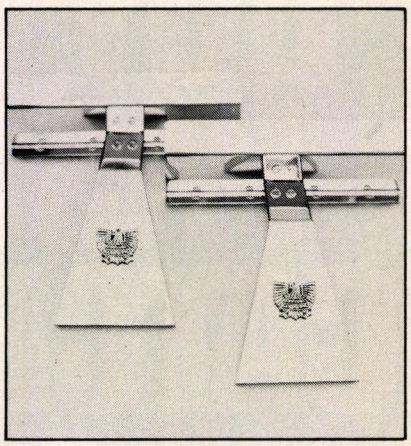
Riding In Comfort: Wheels of Man riding suits are tailored for road-riders who refuse to let the weather get them down. Two styles with different-weight polyester fill can keep you comfortable in cool or cold conditions. Both are designed with quick, secure closures to fend rain and wind while still making it easy to get in and out of the suits. See them at your local dealer or write Van Leeuwen Enterprises Inc., 11135 Vanowen, North Hollywood, California, 91605.



Streetwise Swingarms: Cal-Fab, well-known as a manufacturer of aluminum swingarms for off-road use, now manufactures aluminum swingarms for most popular street bikes. The swingarms are formed from a custom extrusion out of aircraft-quality 6061 T-6 aluminum. For more information write Cal-Fab, 5443 E. La Palma Ave., Dept. CG, Anaheim, California 92807; or phone (714) 779-0123.

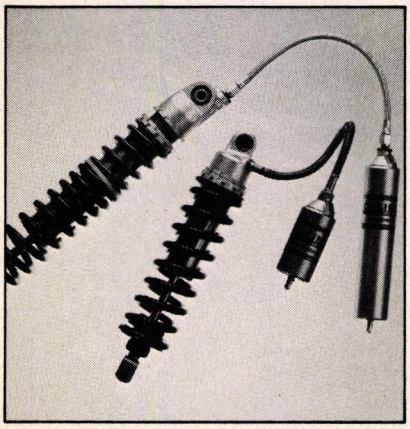
Mr. Turbo: It's new. It whirls, it swirls, it compresses and it impresses your friends with added power and speed. Mr. Turbo claims his unit affords smooth carburetion from idle to full throttle because of features like an equal-length exhaust system and a large-port intake manifold. Kits are available for Kawasaki 900, 1000 and 1300; Suzuki 750, 1000, 1100; Honda 750, CBX; and Yamaha XS11. Prices start at $1395. Contact Mr. Turbo, 5624 South Washington, Hinsdale, Illinois 60521. His phone is (312) 986-5669.





Cover Your Carb: You can cover your Gold Wing's carburetors and plug wires in style with Custom Chrome's shiny covers. These chromed carb covers are available with or without the GL emblem at $38.95 a pair, from dealers or directly from Custom Chrome, Inc., 2419 Zanker Road, San Jose, California 95131; or phone (408) 262-4931.

One Shock Is Enough: HP Racing is distributing Ohlins' new single shock system. The system can be completely rebuilt and adjusted externally. The amount of travel also can be adjusted, and damping is fade-free. These shocks are now available for 1981 Honda CR Pro-Links and Yamaha YZ Monoshocks and they are being planned for Kawasaki Uni-Traks and Suzuki Full Floater models. The system includes steel springs, an aluminum nitrogen reservoir and aluminum forgings, along with Celasto foam bump rubber. Buy the system at your dealer or write HP Racing, 4925 Mercury St., San Diego, California 92111; or phone (714) 565-6239.



Reading For Your Moto-pleasure: Doug Domokos and Len Weed have recently collaborated on a book that should be a treasure-trove to many riders. Called *Wheelyin' With the King*, the wheelie king reveals his unicycling secrets, including how to prepare your bike for one-wheel tricks. Domokos describes a tour around the Superbowl of Motocross track—on the rear wheel only, of course—and tells the reader how to wheelie rough terrain as well as depicting many of his antics: Fender benders, one handers, circle turns, bar booters and flag wavers are only a start. *Wheelyin' With the King* can be ordered by sending $9.95 plus $1.50 postage and handling charges (California residents add 60¢ sales tax) to Cleansheet Enterprises, P.O. Box 241, Tarzana, California 91356.

Keep It Together: Metric Screw and Tool Company has a free catalog for you. It features 30,000 items, some of which are bound to help you keep your bike in one piece. Included are screws, nuts, bolts, drill bits, helicoils and more. The catalog even includes some hints on using the special tools sold by the company. For more information contact Metric Screw and Tool Company, 9 Lake Street, Wakefield, Massachusetts 01880. The phone number is (617) 245-4950.

IF THE 1981 BUY OF THE YEAR PASSED YOU BY, CATCH UP NOW ON A NEW '82.

Right now, you've got another chance to own the the most exciting middleweight money can buy, the 1982 Kawasaki KZ550.

The 550 was the hottest bike to meet the street since the original Z-1. Its power, handling and performance put the other middleweight sport bikes to shame. Motorcyclist Magazine named it "Buy of the Year." The other magazine experts* rated the KZ550 best in its class, as well. Waiting lists were miles long, and as you know, supplies ran out fast.

So don't wait, the brand-new 1982 KZ550 is here, and even better for '82. There's one at your local Kawasaki dealer, just waiting for you.

But hurry. It won't be there for long. Why wait for next year to own the ultimate middleweight sport bike?

Kawasaki

Let the good times roll

Available October, 1981, in limited quantities. Mirrors included as standard equipment. Cable lock optional. Kawasaki believes in riding safely. Check local laws before you ride. Member, AMA and MSF.

* Cycle Guide, Sept. '80. Cycle World, May '80, Oct. '80. Motorcyclist, Apr. '80. May '80, Feb. '81.

GUIDE LINES

Cycle Guide's Monthly Chronicle of Scoops, Tips, Rumors and Hard Facts

BY LARRY WORKS

COMING SOON

• The bottle hasn't been officially opened yet, but small tastes of '82 vintage have begun to slip past the cork already. Normally, early-introduction models abound with changes to paint, tape and nothing more, but there are exceptions. Exceptions like Suzuki's 1982 flagship—not the biggest in the lineup, but certainly one of the most noticeable—the **Katana 1000S** that you read about in the Rumors section months ago. Yes, it's finally materialized, two-tone seat and all.

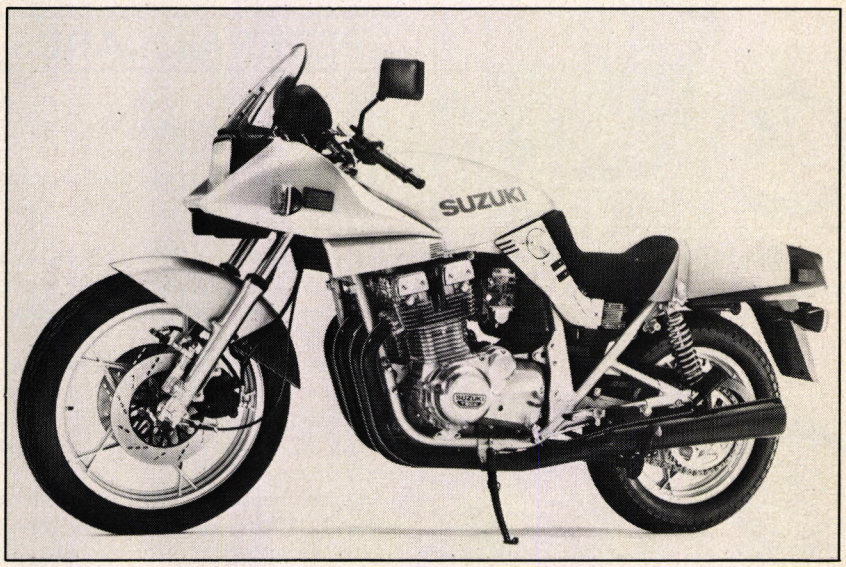
Take your eyes off of the . . . singular styling of the Katana and you notice that function as well as fashion were dialed into the equation: An **anti-dive** fork with preload adjustments suspends the Katana's front end while shocks adjustable for preload and damping hold up the rear. Triple slotted discs handle the stopping and a five-speed 998cc TSCC engine provides the go. Beyond that, the Katana's specs include an electric tachometer, 5.8-gallon fuel tank, extruded aluminum swingarm, forged aluminum handlebar and a choke knob that mounts on the bike's left side panel. With the 30.5-inch-high seat empty, the Katana tips the scales with a claimed **511**-pound dry weight.

• The early introduction Suzukis also include an **850L,** which for 1982 arrives with new-design mag wheels, a repositioned choke lever, sidestand check light, and a repadded seat. The **shaft-drive** 850 also appears with a two-tone paint job this year, but much of the technology carries over from 1981. Which means, by the way, that this particular cruiser has triple discs, tubeless tires with raised white lettering, a quartz-halogen headlamp and a leading-axle fork with air assist.

• Most of the same changes made to the 850L translate intact to the 650L this year. The 650 engine is common to three models—the shaft-drive L, a shaft-drive G-type middleweight touring bike and the E-type, a chain-drive sport version. The G received detail changes including new mags and a fuel gauge for 1982, while the E version now comes equipped with fuel gauge, **air-spring** front fork, damping-adjustable rear shocks and a new instrument design.

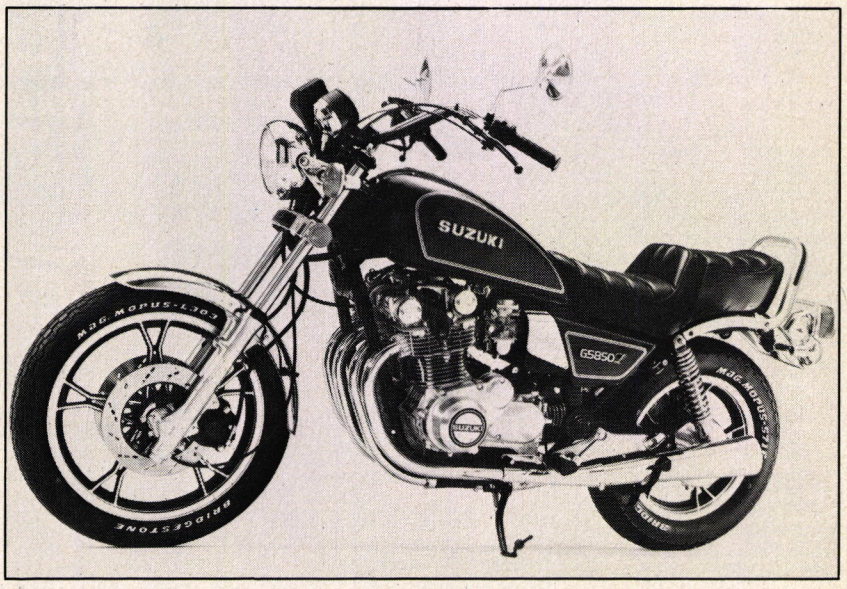
• There's a 550L as well, this year updated with a slotted front disc, **leading-axle,** air-spring fork, new mags and a different bushing arrangement in the fork for lower sliding friction.

• But even though Suzuki whetted your thirst for new models with a few short sips, don't think that only one manufacturer is releasing 1982 models early. Not by a **short** shot. Honda, too, has jumped into the 1982 arena with a new **sport** machine. Its specifications speak for themselves: The **MB5** features a five-speed, close-ratio gearbox, gear-driven counterbalancer, hydraulic front disc brake and a 2.4-gallon fuel tank that extends under the seat to keep the center of gravity as low as possible. Massive finning keeps the cylinder head temperature down, allowing the 49cc engine to spin out a maximum 6.33 horsepower at 9000 rpm.



Suzuki's 1982 lineup will include the controversial GS1000S Katana

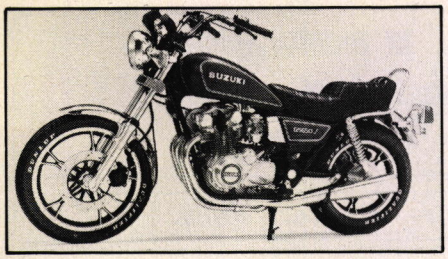
This is your chance to buy into the space program.



Or opt for the GS850GLZ, a shaft-drive cruiser with a more familiar silhouette

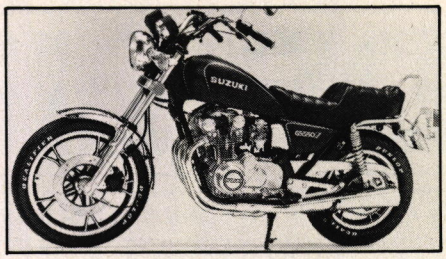
And ride off with adjustable-damping shocks, triple discs and new wheels.

Continued



GS650GLZ strongly resembles the 850L

Didn't you see this shot on page 21?

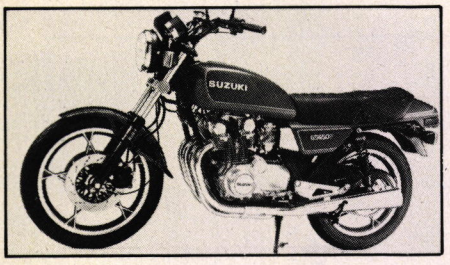


Or a middleweight cruiser, the 550L

It's called model proliferation.

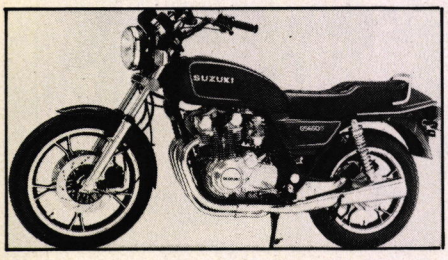
Honda's 1982 MB5, a nopedder's dream

Five speeds, tach, speedo and 49cc.



While 650 E and G cover sport and tour

With detail changes for '82 spec.



FEDERAL CASES

• Not far behind noise regulation as a concern of motorcycle legislation is the question of rider **education,** which is shaping up to be a major focal point throughout the Eighties. Even now, action is being taken on rider education at the state level.

• For example, a pair of bills in Delaware and Connecticut would, if passed, offer motorcycle **awareness** programs in those states as an adjunct to driver education classes.

• Current legislative action in Oregon is designed to permit schools to offer rider training, and would start funding the instruction through a $2 increase in motorcycle **licensing** and renewal fees.

• Maryland House Bill 1309 would set up separate rider training programs in each Maryland county. **Funding** for the programs would come from a $5 increase in motorcycle registration fees and from a maximum $20 enrollment fee.

• Likewise, Nebraska Legislative Bill 22 calls for a rider training fund set up by increased **registration** fees.

• A similar sort of program went into effect in Arizona recently, where, with the passage of **SB1341,** $1 from the $9 registration fee will be channeled into the Arizona Motorcycle Education Fund for a rider training program.

• And in Washington state, rider education is being taken one step further with SB3381. The bill, if passed, would require a certificate from an approved rider education course as a **condition** of obtaining a motorcycle license. The bill passed the state senate there, and is still churning around the Washington House.

• Some similar thinking was apparently going on in Massachusetts, but the measure **died.**

• Those last two measures make rider educa-

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tion sound almost **punative,** but there are some advantages. For example, Texas law allows any person between 15–18 years old to operate a sub-125cc motorcycle after having passed an approved safety course.

• Rider education is getting around, and so is Motorcycle Safety Foundation instruction. But it isn't all at the state level, you know. In fact **MSF** training methods have recently been accepted by a rather large organization: the U.S. **Navy.**

• Apparently, **headlight** flashers made a big hit in Gotham. Legislation is being considered in New York that would mandate the use of the flashers, which increase a motorcycle's conspicuity by flicking its headlamp on and off at a rate of up to four times per second. If the proposal passes, all motorcycles licensed in New York would have to be brought up to spec by adding the **flashers.**

• Flashers aside, New York riders will probably notice that things are getting a little brighter—but not necessarily for them. A bill awaiting signature by that state's governor will allow automobiles there to run quartz-halogen headlights. That's nothing new to New York riders, though, since **halogen** headlamps on motorcycles have long been legal there.

• Staying on the East Coast for a bit, a bill in Connecticut would require that state to open up and maintain more **trails** for off-road vehicles. HB6392 is still alive, but has been "boxed" for the moment and won't see any action until some future legislative session.

• Taking a jump to Indiana, here's a touch of news for would-be **Harley** buyers. Listen up, the wording of Senate Bill 200 there might be of some interest. The bill would offer tax incentives for purchasers of U.S.-built road machines. It doesn't say anything about how many wheels they have to have.

• And in Kansas they do it differently. At least they will if a recent bill passes into law. The bill would require bikers who don't wear helmets

HI-TECH:
Anti-Lock Braking Systems

Two new designs might well pull the panic out of panic stops.

• Braking doesn't have to involve breakage, and might not as soon as Girling and Dunlop introduce two new designs for anti-lock braking systems for motorcycles. The two systems are entirely different, and have been under development since 1974.

Early design work on one of the brake systems was conducted by the British government-backed Transport and Road Research Laboratory (TRRL) in England, which developed an electro-mechanical affair that was fitted on a Norton Commando. On this early design a transducer monitored the speed of notches in the periphery of the disc. When an under-seat computer determined that the wheel was being braked at a greater than safe speed, it reduced fluid pressure to the disc through a valve in the brake line. The bypass valve flicked open for only a fraction of a second, but if wheel-locking continued it would snap open and closed until the test bike stopped safely.

To maintain constant fluid pressure in the hydraulic system the TRRL design incorporated a small pump driven by a cam on the front hub. This basic design is currently being refined for production by Dunlop. Since the days of the early testing, Dunlop claims that its design has evolved to the point where it looks little different from a conventional disc brake system.

Girling took another approach with its design. Its anti-locking device is all-mechanical and is contained entirely within the front hub itself. Two factors working in favor of the Girling design are a claim that the device is far cheaper to produce than the more elaborate TRRL system and that the Girling stopper will be ready for production in 1982. And perhaps early enough, according to rumors, to be included as an option in two 1982 motorcycle manufacturers' lineups.

Dunlop also claims to have a number of Japanese companies interested in its design, and although the Dunlop stopper won't be on the market first, Dunlop seems convinced that the greater sophistication of its design will make it the long-term victor in the war against locked wheels.

—David Dewhurst

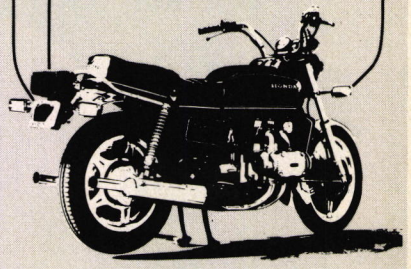
Continued

The Dualock Frontlight Coupler is a bright idea!
Turn your front turnsignals into running lights, without interfering with normal functioning. Greatly increases front end visibility, day and night. Only 7 color-coded wires, installs instantly. Only $24.95.

The Dualock Automatic Turnsignal Canceler turns you off!
Avoid turning a signal into a road hazard with this easily installed solid state canceler. With only three wires to connect (no cutting or splicing!) this sealed unit installs in minutes. The adjustable timer turns off your lights, even if you forget. Only $24.95.

The Dualock Dualarm is a loudmouth when you're not there!
Deter thieves with this weatherproof self-contained alarm. A tough ABS housing protects the solid state adjustable sensor sounding off through dual horns-after 45 seconds of 110db noise, the alarm automatically rearms. With interlock switches behind the chrome-plated steel cover and impossible-to-remove mounting hardware, the Dualarm is tamperproof. Only $49.95.

The Dualock Multi-Brite Taillight Coupler lights up your life!
Improve visibility and safety with this simply wired taillight coupler (only 7 color-coded wires!). Turns rear signals into running and brake lights, without interfering with turn-signal functioning. The solid state Multi-Brite-a tiny sealed package-a big improvement in your safety. Only $24.95.



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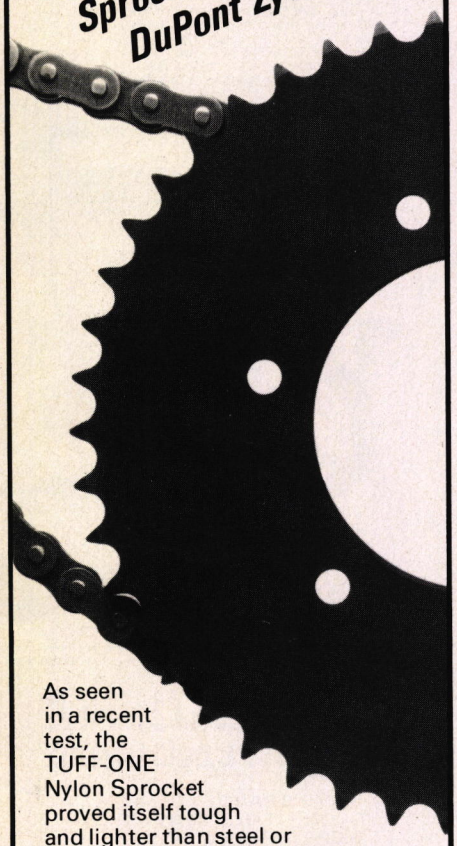

As seen in a recent test, the TUFF-ONE Nylon Sprocket proved itself tough and lighter than steel or aluminum. While increasing chain life it was also found to be quiet running. Available individually, or with steel countershaft sprocket. Add a self-lube chain and you have the complete kit. Your only choice is a TUFF-ONE!

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to carry another form of protection—mandatory personal **injury** insurance.

- Insurance is also the concern of new legislation in Arizona, which now requires that all registered vehicles carry **liability** coverage.
- As you read in this column a few months back, Nevada treats its **speeders** somewhat differently. Rather than receiving a citation for speeding, the fast-laners there are given $5 tickets for excessive **energy** use for highway speeds up to 75 mph. Apparently the idea is catching on; 17 members of the **Ohio** House have set a bill in motion that would, if passed, set fines for speeds between 56–70 mph there at a whopping $3.
- Radar and Florida are in the news again, this time with the release of findings from a commission to determine radar's effectiveness. Following a celebrated case last year in which the accuracy of **traffic-control** radar was questioned, the commission was formed to set new guidelines for radar use in that state. The commission's conclusions include a prohibition on locking devices—items that allow an officer to adjust a radar unit to trigger at a set speed. The commission found that use of such locks allowed patrol officers to make use of spurious readings and not identify a vehicle *before* the radar targeted paralegal speeds.

Another of the findings was that police radar contributes to a failure to identify which of a group of vehicles is speeding. Radar tends to register the strongest rather than the closest signal, and can't differentiate between slow and fast vehicles in a group. Because of the commission, the **radar** units used in Florida will be recalibrated to sweep a narrower area, making them, in the commission's eyes at least, more accurate.

One other finding resulted in a switch to K-band radar from the lower-frequency X-band, in an attempt to reduce interference from electrical sources.

The new Florida radar guidelines also include additional police training in the use of field radar, and are expected to be used as the basis of other states' revamped radar regulations. They are considerably more stringent than the federal regulations that are expected to be released by the NHTSA soon.

- And in Alberta, Canada, the **helmet** controversy continues to rage. In August 1980, the mandatory helmet law there was held to be **unconstitutional.** The presiding judge was ordered to re-hear the case. He reaffirmed his ruling eight months later. Now the Attorney General has ordered the law to be upheld pending an appeal on the second ruling.
- Trivia fans who have been losing sleep wondering about New Mexico's definition of a **moped** can relax. That state has clarified its position on tiddlers. For the record, a moped in New Mexico is now **defined** as a vehicle having two or three wheels, automatic transmission, with a displacement of less than 50cc and a maximum speed of 30 mph at sea level on level ground. This new definition also removed the requirement that a moped must have pedals.
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Saddlebags complete Add $30 for color match	$359.60	$279
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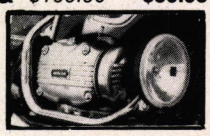
Helmet Bag Practical helmet storage and carrying case. Aluminized nylon with synthetic fleece lining. Full zipper for easy storage.	$30.00	$14.95
Nava Integral 11 Helmet Black only.	$98.95	$71.95
DryRider Two-Piece PVC vinyl rainsuit. Amber color.	$26.50	$24.95
The BAGMAN Soft Saddlebags. Black Cordura nylon.	$125.00	$119



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the NHTSA cut down a petition that would have set a **55-mph** limit on all cruise **control** devices.

• Judging by the sheer bulk of legislative action concerning motorcycles, it would be safe to say that motorcycles are getting noticed. But not, it seems, always getting their due. Individual states have hopped on the bandwagon to promote fuel efficiency, usually in the form of **breaks** in sales tax, excise tax or through lower registration costs for vehicles with exceptional fuel economy. In fact, this year Connecticut, Hawaii, Maine, Massachusetts, Minnesota, Pennsylvania and Virginia all had proposals to provide incentives for fuel **efficient** vehicles. Not one of them mentioned motorcycles.

HARD CASH

• As often happens, the end of the money trail this month is sport. For example, think about the one lap that Jay Springsteen cut at the Santa Fe **TT.** That one lap earned him more than the Winston Pro Series point he was awarded. It also got him **$10,000** for being the leader at the halfway point in the series.

• Or if you're still counting, figure up the **$18,000** that Harley-Davidson put up as contingency money for the remaining six **Battle Of The Twins** races. First finisher on a Harley takes home $500 in H-D race money. If he also wins the race, the purse jumps to $3000.

• Of course, not all the figures relating to Hard Cash have dollar signs in front of them. Some are production figures, like these gleaned from the Japanese Automobile Manufacturers' Association. They show that the total of all motorcycles built in Japan last year was **6.4 million** units. Of those, 3.9 million were exported.

• And still others of those figures relate to fuel-efficiency, which at some point or other always ends up as hard cash. If well-intentioned carpoolers are trying to get you to take the plunge with an argument of **fuel economy,** strike back. The California DOT Office of Motorcycle Coordination recently released a report showing that commuting on a **motorcycle** is 30.9 percent more fuel-efficient than a three-person carpool. It's also 7.9 percent **more efficient** than a four-person pool. Now, try convincing those pool types that they ought to save a little gas.

AFTER THE FACT

• One of the things we complained about in the **XV920** test was a sidestand that was too tall, leaving the motorcycle tottering on the brink of a fall. Sooner or later, we figured, it was going over the top. It did. What we hadn't figured on was the extent of damage from the 0–mph flop. The right-side turnsignal was smashed, the mirror cracked and the rear brake lever was pushed into the engine case with enough force to crack it—leaving a parts bill of $115.30 for that stationary getoff, according to Yamaha dealerships.

Continued

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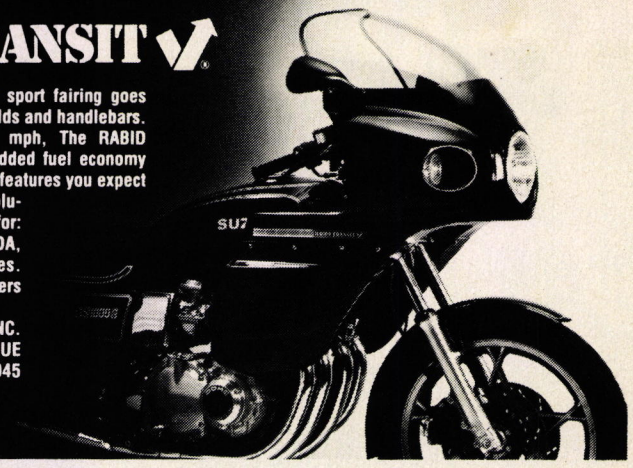

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At Yamaha, we knew the Seca 750 was faster than any other shaft-driven bike in its class.

And we had a hunch it just might be the fastest 750.

Shaft, chain or otherwise.

So we asked drag-racer Pee Wee Gleason to prove us right. And he did just that. Riding a box-stock (without fairing) Yamaha Seca 750 through the quarter-mile trap in a scorching 11.99 seconds.

Fast for a shaft-drive. Fast for a chain-drive. Fast enough for a new official world record.

We weren't surprised.

After all, the Seca's DOHC, four-cylinder four-stroke engine produces more power per pound than any other production 750. And it's coupled with the most efficient shaft-drive unit ever to come down the road.

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much good if the motorcycle wouldn't go where you point it.

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As for looks, look for yourself. Like a lot of people, you just might decide the Yamaha Seca 750 is the best 750cc street-bike around.

And you'd certainly get no argument from us.

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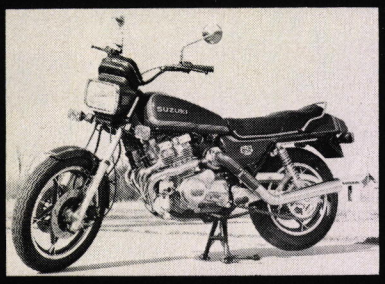

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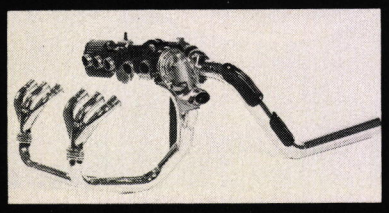

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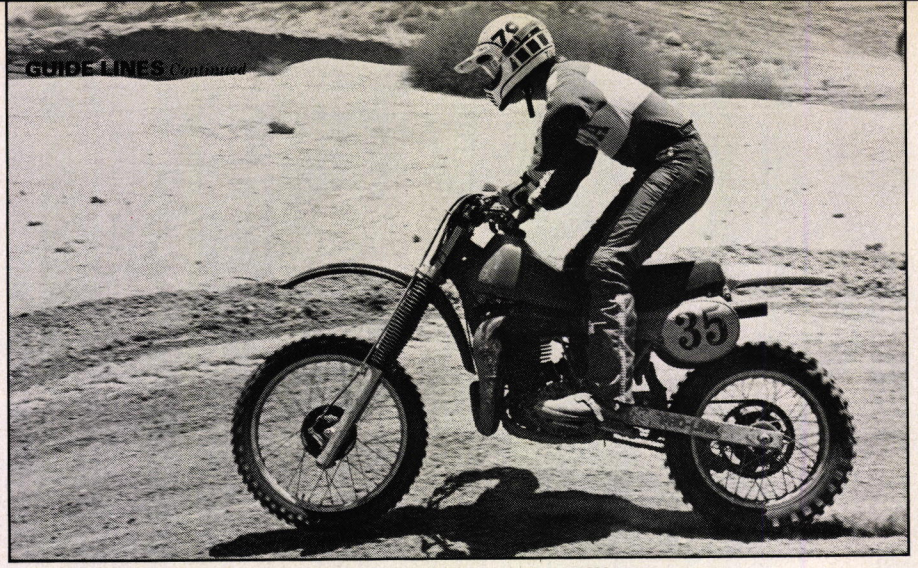


Spy photo of rumored 1982 CR480 long-stroke Open class MX weapon

It's almost like being able to see into the future.

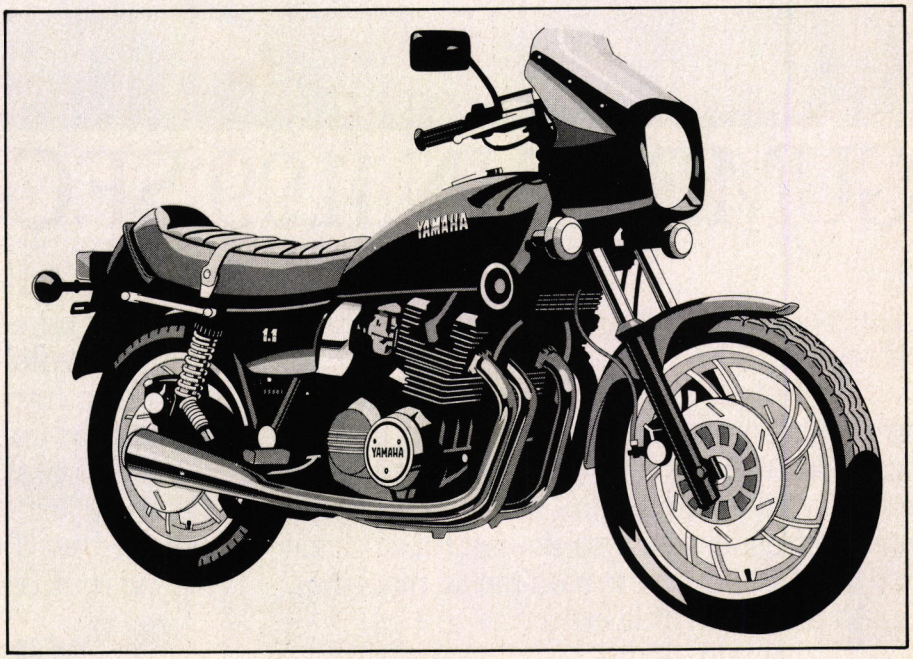
RUMORS

• With the onset of new model introductions, the rumor mill is being squeezed hard to keep cranking out tall tales until reality intervenes to either confirm or refute the latest load of gossip. An example of that pressure is sure to be found in all the loose talk that's circulating about Honda's supposed experimentation with a **twin-cylinder** watercooled 250cc **motocrosser** with two cranks. But just because there's smoke, that's no guarantee of a fire. Right.

• It's talk like that that sets the gossips going, and you just don't know whether or not to believe them. Nevertheless, they can be persuasive. In fact, when those silver-tongued purveyors of could-be start to spin their tales of a **480cc Open-classer** from **Honda,** for example, you almost start to imagine that you can see one. As the image clears a bit, you begin the make out a new aluminum box-section swingarm, a bit of something new at the fork and the hint of a longer stroke. Funny how the mind plays tricks, isn't it?

• Yes, when dealing with rumors, it's hard to keep clear what's real and what isn't. For instance, if you thought that the talk of the twin-cylinder, **twin-crank** Honda MXer was out of line, what can you do with the rumor that **Yamaha** has been and is working in the same direction?

• The Honda talk continues with renewed rumors that the CX500 will finally be punched out to a **larger** displacement. In the past, the gossip has centered on either a **CX650** or—with the advent of the NS750—a three-quarter-liter version. But the latest talk is a shade more reasonable and concerns itself with increasing the CX's displacement to 550cc, a plan that inside sources say has been in the works for a long time.



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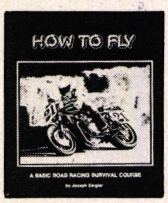
Rumored new look for the Yamaha XS1100 includes fairing, seat and black-on-black

Think of it as a Midnight Special for the café crowd.

Book Review



HOW TO FLY
A Basic Road Racing Survival Course
by Joseph Zeigler
48 pages, $10.00
International Lubricants Corp.
P.O. Box 208
Brookfield, Connecticut 06804

• It figures; I retire from pavement-pounding and someone comes up with a pole-position book on how to go roadracing.

The title *is* misleading, but the weight of information contained within is the stuff of experience and belongs in every roadracer's toolbox. Zeigler takes a basic approach to explaining *The Deal* about roadracing, beginning with motorcycle preparation and selection. Then it's into the main course: basics of cornering, braking, starts, racing in the rain and even crashing—something everyone seems to do at least once in a racing career.

Although I'm an experienced roadracer, "How To Fly" still held my interest, mainly because of what the author said, rather than how he said it. The book is also used by Penguin Road Racing School as a text, and that is how it should be considered. This is a primer on roadracing, not simply entertainment. But as Zeigler's introduction points out, even non-racers have something to gain from a quick read, if only a better understanding of the physics and principles of high-speed sport riding.

Overall, though, the would-be racer stands to gain the most from "How To Fly." In addition to riding techniques, it covers track safety, flags and the fundamentals of entering and exiting the pits—which some novice riders never grasp. The appendix also covers reading spark plugs, understanding gasoline octane, aerodynamics, oils, tires and the effects of heat exhaustion—all worthwhile for the novice racer.

Zeigler supports his text with theories and quotes from well-known riders, too. Perhaps the most useful comes from Team Honda rider Mike Baldwin: "Stock is best." In a nutshell, it says that a novice roadracer will get maximum track time—and make the most improvement—by racing a production-class bike for the first season. And the explanation is right where it should be—chapter one.

"How To Fly" won't win Zeigler any Pulitzer prizes, but it just might win its readers some races. I wish that it had been available when I started racing 13 years ago.

—Dain Gingerelli

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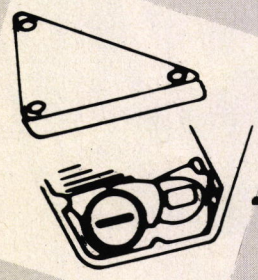

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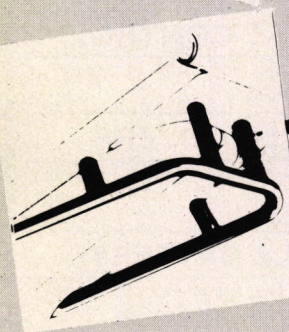

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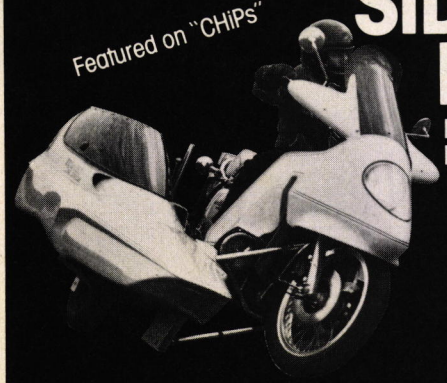

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GUIDE LINES *Continued*

• Remember all that bold talk in this column last month about a restyled **XS1100?** Remember the quarter-fairing, the **café** seat, the tasteful black-on-black paint scheme? Now remember where you saw it.

• Still hovering over the Tuning Fork Factory, some insiders insist that Yamaha will be going head-to-head with Honda in the 500cc dirt thumper class. Sources confide that a new **high-tech** frame has been built to house a mildly revamped **TT500** engine in a direct assault on the XR500R.

• And rounding out the whispers about Yamaha, don't be surprised if **Monoshock** as you know it is **gone** forever.

• If you arrived at the Rumors section by way of Coming Soon, you know that Suzuki's Katana 1000 is due for '82. But the talk is—and this is highly confidential—that sometime after the 1000s are sold and on the road, the model will be followed with a **Katana 1100**—one that will suck the bodywork off of any other production motorcycle in the quarter-mile.

• And on the subject of Suzukis and quarter-miles, what's all that talk about how the '82 GS1100 will actually shatter the **10-second** barrier?

• Part and parcel of the Suzuki rumor contingent is that the 16-valve **400 Four** has been deemed impractical for the **U.S.** market. More's the pity, but that's not the end of this particular bit of flotsam. The rest is that a 550cc street screamer is apparently far more acceptable.

• While you're in the mood to consider mention of **GS550** Suzukis, have you heard anything about a load of 550s that were built up to special spec for use as police **pursuit** vehicles? Sounds incredible, doesn't it?

• But if you're still counting Katanas, count this in as well. Some talk floating around is that **Katanas** will appear in 550cc, 650cc, 750cc, 1000cc and the above-rumored 1100cc versions.

• In another bit of jetsam, possibly related to Suzuki and possibly not, insiders insist that 1982 will mark the beginning of the four-stroke's final **takeover** from two strokes in the dirt.

• One seemingly dangling item is the talk that two manufacturers will offer extremely competent **dual-purpose** four-strokes this year; bikes that are designed to halt the **decline** of dual-purpose bikes in its trials-universal tracks.

• And judging by the talk about what's "scheduled" to happen with the GPz1100, you can either discount it all as mere speculation—or count on seeing a motorcycle in Kawasaki dealerships that's capable of detaching your retinas when you **goose** the throttle. You decide.

• If other whisperings about Kawasaki's 1982 lineup are accurate, you can count on kissing the air-cooled **KX125** goodbye. Informed sources insist that the eighth-liter MXer will be **swilling fluid** this year to keep a cool head.

• And if you buy that, surely it's a small leap of conjecture to the talk about a major effort by Kawasaki to turn the KZ1100 Shaft into a from-the-ground-up **luxotourer** in the same

class as the Honda GL1100 Interstate.

• One item slated for the Cologne Show—at least in the minds of avid gossip fans—is a supposed design that **Moto Guzzi** will unveil. The design is for a three-valve head for future Guzzi **sport** bikes, according to overseas sources. It incorporates a conventional inlet and exhaust valve, but adds a secondary inlet valve that operates only at low engine speeds.

• And from Ducati comes the talk that a soon-to-be released **Pantah** will arrive with a **single shock**—possibly a Paoli—suspending its rear end.

• Also from sunny Italy comes the rumor that a few totally new machines are on the drawing boards. And those boards reportedly include a **500cc Benelli** street thumper and a **425cc** vee-twin from Moto **Morini.**

• Jumping back to a more familiar continent, **Can-Am** is reported to have some new twists for the 1982 model year. Reaching into the maelstrom of rumors results in some fairly firm talk of a six-speed 125 MXer with case-reed induction, as well as a **250cc water-cooled** motocrosser with more than 13 inches of wheel travel at each end.

• But if you won't bite on that, there's probably little chance that you'll swallow the talk that a **cunning** little gadget from Japan's Agency of Industrial Science and Technology will soon be entering your life—or your helmet. The device uses a **sensor** to monitor brain waves to determine when a subject is about to doze off—or at least isn't paying full attention. When the sensor detects anything less than rapt attention, an **alarm** is triggered, presumably bringing the subject/rider/driver back to wide-awake status.

• Of course, if you're still hungry for rumors, there are those voices howling in the night that insist that **16-inch** wheels will find their way onto production sport bikes this year.

• Okay, okay, maybe you just can't see it all happening. But there's a rumor to fit that **prescription,** too. You have heard, haven't you, about a major U.S. eyeglass manufacturer branching into the motorcycle market with a helmet **shield** that's sun-reactive, that doesn't have to be changed frequently because it alters its **shade** with the amount of ambient light? No? Listen again.

APART FROM THE CROWD

• File this under art as an imitation of life. When Yamaha's vee-twin Virago first arrived, side bets began flying on how long it would take some entrepreneur to see through its facade, to find the true Virago under the **semi-hardtail** looks. It wasn't long. Billy Budde, SoCal customizer, tackled the project and started the transformation with side-mounted Mikunis topped with circular air cleaners—chromed of course. And decorated with engraving and gold plate as well. Then there are the twice pipes, which really aren't, since each pipe splits into two and exits on both sides of

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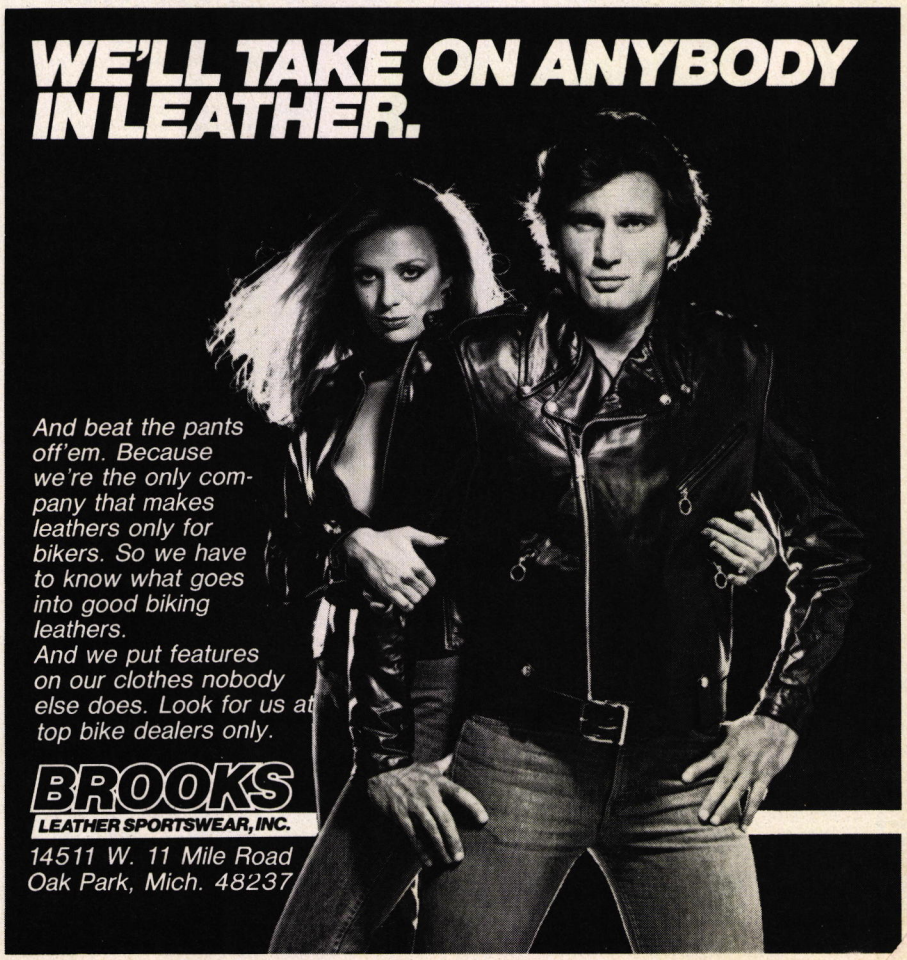
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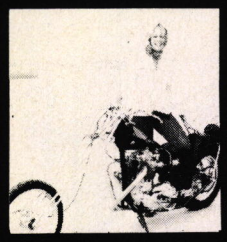

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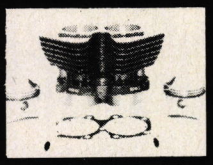

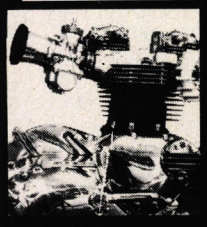

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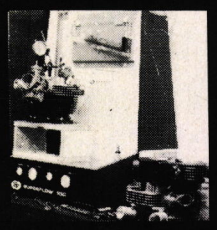

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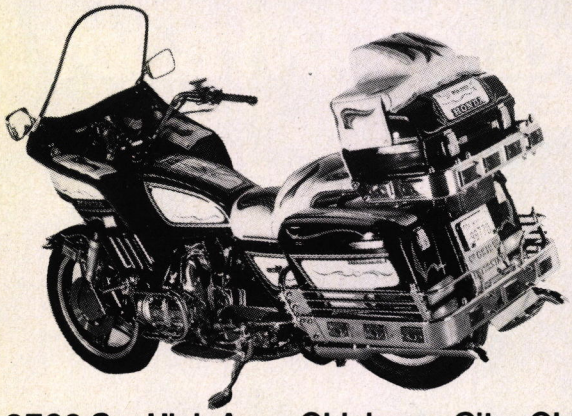

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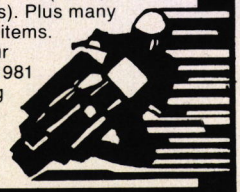

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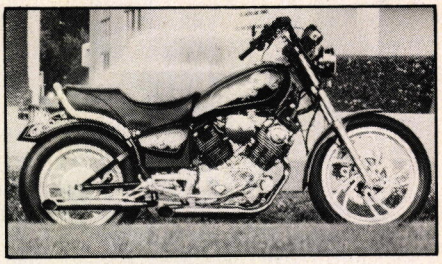


Virago recast as objet d'Americana

A short tweak makes a Yama-Davidson.

the bike. Sort of twice times twice pipes. Future items will include a Fat Bob-type tank, highway pegs and if possible even more engraving and gold plate. Some call it art; others just call it **Yamahog.**

• Say you stood a scant four feet tall in your riding boots. And say you wanted—absolutely had to have—a **replica** of a 1926 Moto Guzzi boardtrack racer. The Italian firm HRD—

HRD 1926 Moto Guzzi replibike

Those racers get younger every year.

the same company that produced the subcompact copbike in the August issue—would have the fix. Call it art in **miniature.**

• Here is an item that definitely belongs in AC. One of the rigs at this year's Aspencade will be carrying a bit of unusual equipment: an air conditioner. Larry Cook, owner of Custom Dressers, decided that what the world needs now is an **air conditioned** sidecar rig. And so he built one. The basis for the bike is a turbocharged KZ1300 with 16-inch wheels front and rear. From there, the crank was extended on both sides, to spin a 55-watt alternator and a freon compressor. The cold arrives at the Motorvation **sidecar**—which also has AM/FM and radio communication with the rider—via flexible hoses. As if that weren't enough, the hoses also connect to crop-dusting helmets worn by the 1300's rider and passenger—no doubt assuring a cool head at all times. As a final touch, a small refrigerator is planned for behind the sidecar seat, to guarantee a cool head on the A&W as well. Cook reports that the cost for his popcycle is in the vicinity of $22,000. •

DOING IT OUR WAY:

Twin-Turbo Suzuki GS1100

Faster than a speeding bullet? No.
More powerful than a locomotive? Huh-uh.
But it's close, so close.

BY PAUL DEAN

Enough might be enough in most circles, but in the ones that most motorcyclists ride in, it isn't. That's why to most riders, no motorcycle is ever fast enough, regardless of how fast it already is.

Not all of you might agree with that, but the fact that you've shown enough interest in high performance to pick up this magazine and read about a 175-mph turbobike indicates that you at least *understand*. So there's no need for us to explain in great detail why we did what we did, why we took what already was the most outrageously fast stock motorcycle ever built—an 11-second, 140-mph Suzuki GS1100—and then went to a lot of trouble to make it quite a bit faster yet. Let's just say that we did it because . . . because it was *there*.

Now, we all know that there's nothing new about putting a turbocharger on a motorcycle; it's been done by a lot of people for a lot of years. But the turbo system we installed on this motorcycle is highly unconventional in one important way: It uses two—count 'em, *two*—turbochargers. And while it's obvious that not even dual turbos can give our home-brewed special the fuel-injected, solid-state sophistication of a big-bucks factory effort such as Honda's CX500 Turbo, it's a mighty impressive

Continued

hunk of high-performance metalwork nonetheless.

Indeed, anytime this bike's dueling turbos are spinning fast enough to pump a full load of boost into the 16-valve motor, it becomes one raging, viciously fast motorcycle—"an animal," in the words of Bob Behn, the man behind this twin-turbo setup. One indication of the firepower welled up inside this motomonster is the 172-mph top speed it recorded the day we let it loose at El Mirage dry lake. And even on the street it left an indelible impression on everyone who saddled it up—most of whom swore they had seen God on the dark side of 10 psi of boost.

Despite that warp-speed performance, though, what most people wanted to know about our Superzuki wasn't "How fast is it?," but rather, "Why *two* turbos?" A lot of them thought we had somehow fallen victim to the popular misconception that if one of anything is good, two *has* to be better. But that's not what Behn, owner of RB Racing in Culver City, California, had in mind when he started fiddling with dual turbos earlier this year. He was trying to accomplish what has proven all but impossible with a single turbo—to deliver a high level of boost at the very top of the rpm range for maximum performance while also offering crisp throttle response (minimizing "turbo lag," actually) at low and middle rpm for acceptable streetability.

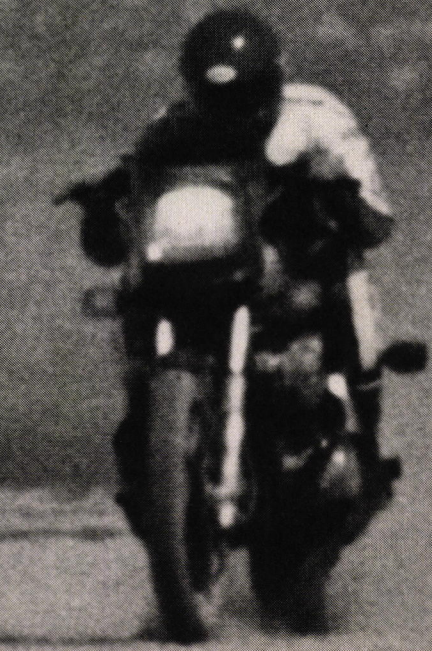
Simply hanging a large-diameter turbo unit in place would have provided the requisite high-rpm boost, to be sure, but doing so also would have rendered the throttle response sluggish at best. You see, a turbocharger's compressor wheel, which is spun by the hot gases rushing through the exhaust system, behaves just like a flywheel: The bigger—and thus heavier—it is, the greater its inertia and so the more it resists any quick changes in speed. And what turbo lag is, then, is the wheel's reluctance to being speeded up quickly when the throttle is opened and the flow of exhaust gases is thereby increased.

Obviously, since all compressor wheels have some inertia, turbo lag has to be inherent in all turbocharged engines; but the lag can be held to a reasonable level if the turbo isn't too big in relation to the size of the engine, although maximum performance will suffer as a result. And therein lies the beauty of using two smaller turbos. Together, they can provide at least as much sheer boost at high rpm as one large turbo; but since the combined inertia of the two smaller-diameter compressor wheels is considerably less, the throttle response can be almost as crisp as though a single small turbo were used.

Behn acknowledges that there's nothing original about the twin-turbo concept and that he first got the idea to try it on a motorcycle after seeing it put to good use on various kinds of racecars. Still, he had to employ some industrial-strength ingenuity just to fit all of the necessary hardware into the confines of a motorcycle.

All things considered, he managed quite well, as evidenced by the tidiness of the completed installation. The four individual header pipes join just ahead of the engine into a common junction that also serves as a logical mounting point for the Boost-Guard non-adjustable 10 psi wastegate (which, incidentally, is a $200, maximum-quality unit built by Tom Castellano, who manufactures the wastegates used on many Formula One racecars, including the highly acclaimed Renault Turbos). From there the plumbing splits up into two almost-symmetrical exhaust systems, one per side, each with its own IHI Model RH05 turbo (the smallest turbo unit in existence, aside from the one developed exclusively by IHI for the Honda CX500 Turbo) tucked behind the cylinders. And feeding this brace of turbos is yet another contribution from the four-wheel world, a Weber two-barrel downdraft carburetor that nestles snugly beneath the front ends of the under-seat frame rails.

Much of this hardware was, and still is, in the developmental stage, since our bike was the recipient of Behn's first fully operational twin-turbo system. Given that, the



performance seemed even more impressive considering that the turbo arrangement was on its maiden voyage. As mentioned earlier, the top-end power was nothing short of phenomenal, and the throttle response and low-rev tractability most of the time ranged from acceptable to good. The biggest glitches were a few soft or blubbery spots in certain low-rpm situations, and the fact that the acceleration at sub-boost engine speeds (anywhere below 5000 or 5500 rpm) wasn't as good as on a stock GS1100.

To a certain extent, some lackluster performance was expected at lower revs, which is the case on *any* turboed engine. After all, a slow-moving turbine wheel sitting right in the middle of the intake system constitutes a considerable obstruction to airflow. But Behn feels he can tune out most of the flat spots and sharpen the unboosted acceleration with some additional R&D on the system—namely, on the intake manifold (which was a hand-built prototype that doesn't flow air as smoothly as Behn's cast-alloy production manifold will); in the exhaust pipe dimensions (some minor rerouting to improve cornering clearance and increase rider legroom, and smaller-diameter wastegate-to-turbo pipes to improve bottom-end response); and in the Weber carburetor (final jetting and adjustment specifications).

That carburetor, Behn feels, is part of the reason why the bike goes like gangbusters on the top end, *and* why he's hopeful it will ultimately do wonders for the low-end performance. It flows more air than the carbs traditionally used on other turbo installations, and just about every aspect of it is widely adjustable—the jetting, of course, but also the accelerator-pump action, the float level and even the actual throat size, which can be varied anywhere between 32 and 42mm in 1mm increments just by slipping different venturi rings into each barrel. We used only 34mm venturis, even during the speed run, but we undoubtedly would opt for one of the larger sizes any time maximum horsepower became the only consideration.

Feeding that big Weber a steady 6-psi diet of premium gasoline is an Autopulse electric fuel pump tucked up under the gas tank. It's just behind another electric pump, a special aircraft-type unit that recirculates one quart of 10W-40 oil (stored in a small tank under the battery) through the high-speed bearings in the twin turbos. Since the GS1100's roller-bearing crankshaft requires only a low-pressure oiling system, Behn had to devise this separate, higher-pressure system to keep the turbo bearings alive and well at 140,000 compressor-wheel rpm.

Actually, keeping the entire *engine* alive and well under the stress of full-boost operation necessitated a few other modifications to the stock GS. The built-up crankshaft, for instance, was welded by Vance & Hines Racing to prevent it from twisting out of alignment, and a soft copper gasket was sandwiched between head and cylinder to reduce the risk of leakage under full boost pressure. And, since clutch failures have proven to be an Achilles' heel in highly modified GS1100s, we bolted up a Vance & Hines Superhub. It's a remanufactured stock outer clutch hub made bet-

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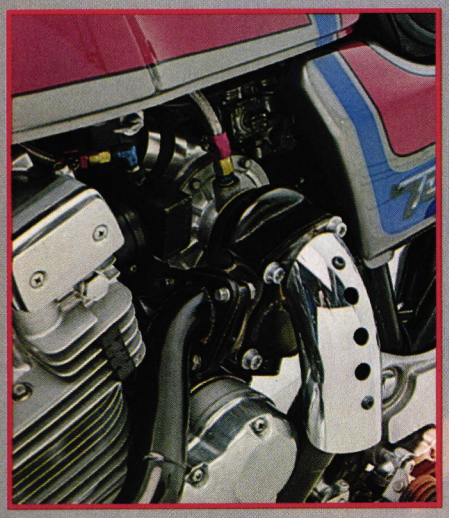
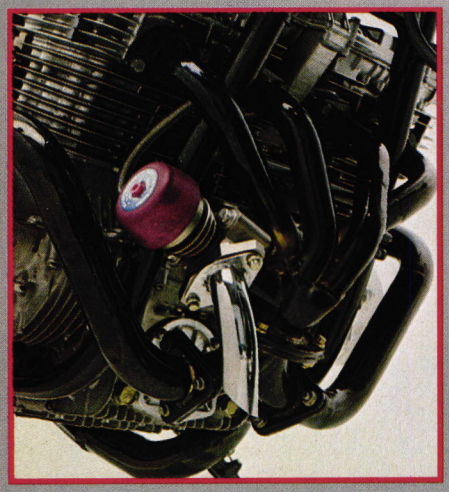
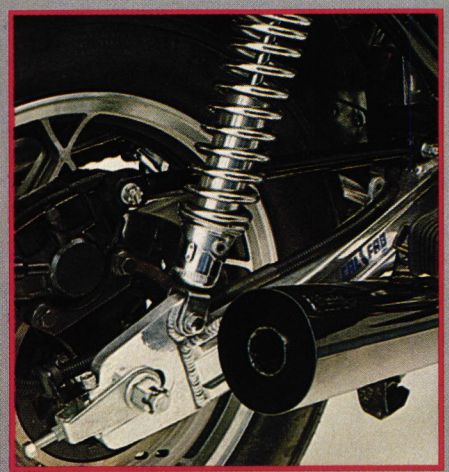
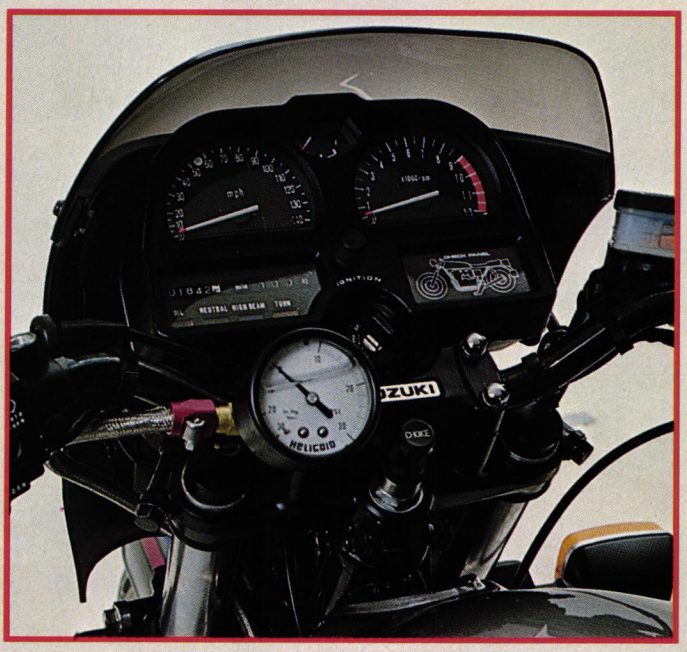
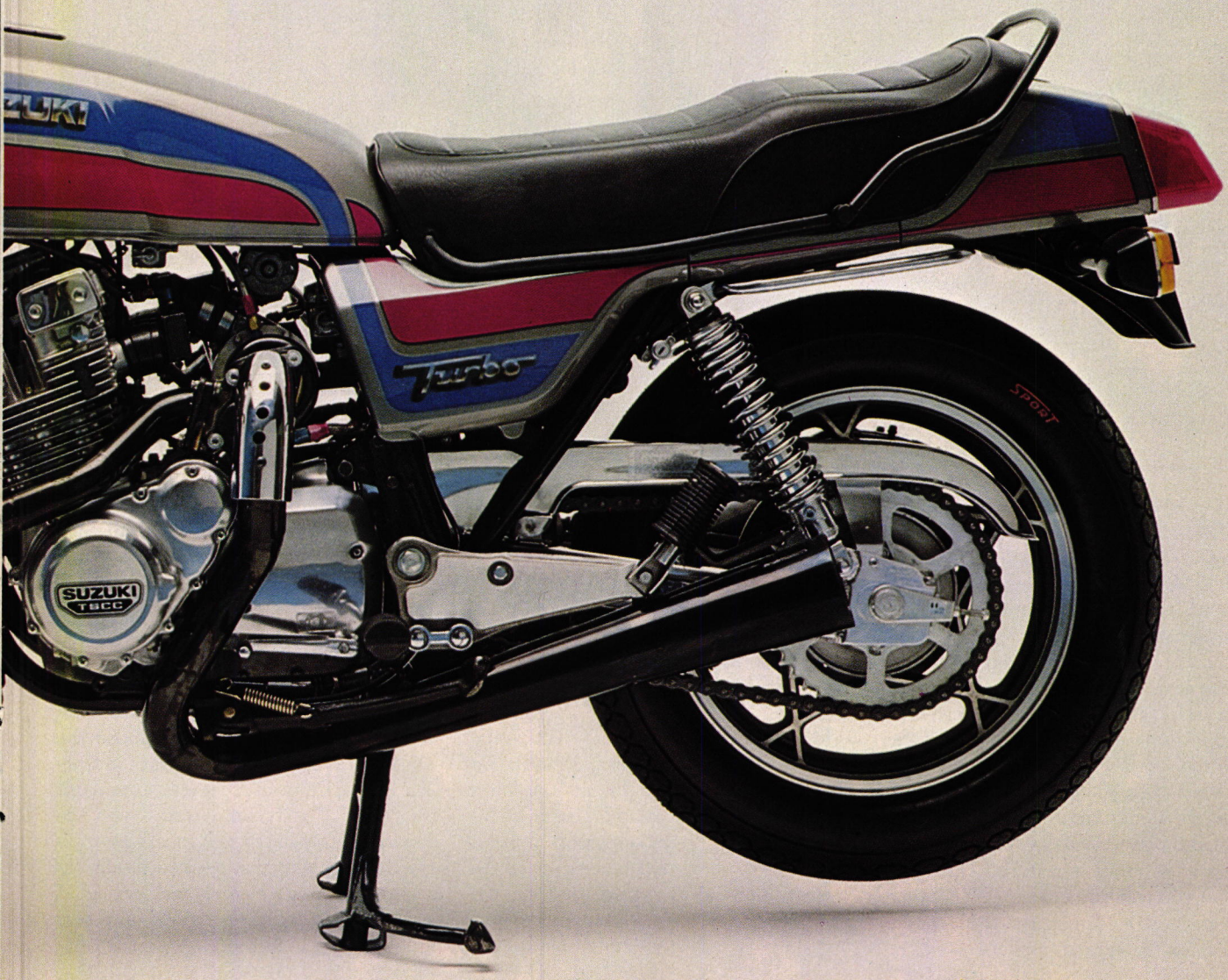
Suzuki Twin Turbo











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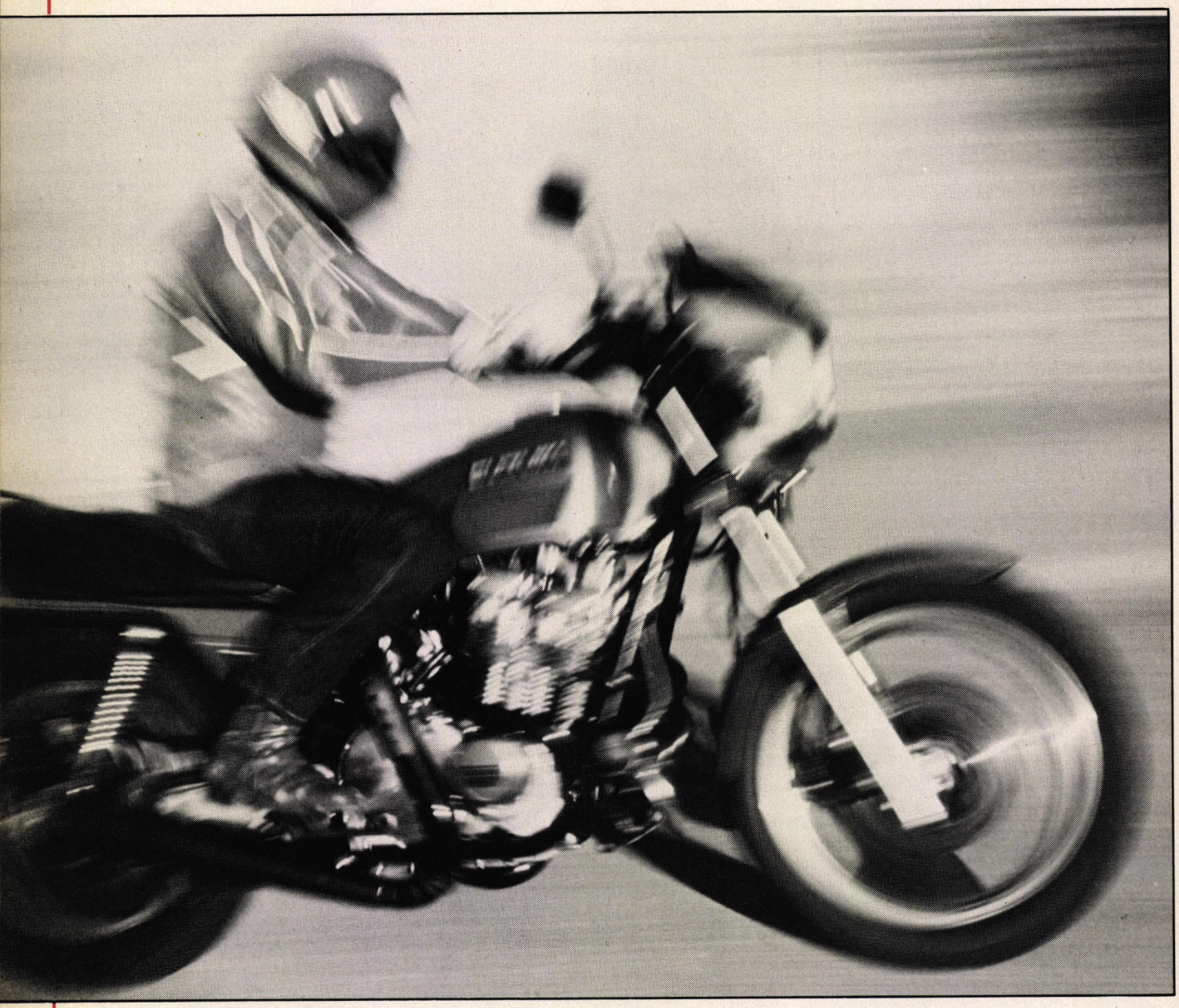

ter and stronger by virtue of its thicker steel back clutch plate, stronger cush-drive springs and welded stainless steel rivets securing the cush assembly to the hub. With a set of Barnett high-performance plates finishing off the clutch, we were confident that no problems would crop up in that crucial area.

Overall, the only performance-related modification we made to the engine other than the turbo system was to replace the stock 9.5:1 cast pistons (which would have fractured under the increased temperatures and pressures anyway) with a set of Wiseco 7.5:1 forged pistons. They were available only in 2mm oversize at the time, though, so we gained an added 60cc of displacement for a grand total of 1135cc.

Otherwise, the rest of the engine was left bone-stock, and for good reason. We were trying to establish the effectiveness of twin turbocharging, not going for the land-speed record, and extensive hop-up measures would have made that task almost impossible. So everything else in the engine—cams, valves, ignition, etc.—was left as-is.

Modifications to the rest of the GS1100 were few and far between as well. We changed rubber, naturally, settling on a pair of the soft-compound Metzeler ME77 Sport tires that have been highly successful in big-bore box-stock roadracing. And a few roadracers also have reported that despite the GS11's reputation for superb handling, its extruded-aluminum swingarm has been known to flex a bit when both rider and motor are at ten-tenths, so we replaced it with a massive Cal-Fab arm, a gorgeous unit fabricated of 6061 T-6 heat-treated aluminum.

Finally, to provide the proper racy look for this decidedly racy motorcycle, we adapted a nifty quarter-fairing from a Kawasaki GPz550, bolted up a Superbike low-rise handlebar and then shipped the whole works down to Al Martinez in Garden Grove, California, for a custom paint treatment. The finishing touch was the demise of the Claybrook-model 85-mph speedometer face that seemed totally incongruous on a 175-mph motorcycle. It was obliterated when we glued on a new 140-mph speedo face from Moonlite Ltd.,

which also recalibrated the speedo to work with the new graduations. Even then, however, with the 31-tooth rear-wheel sprocket we used for the El Mirage top-speed run, the bike could come within 4 mph of pegging the speedo needle without exceeding redline in *third gear*.

In the end, that tells the story of this Twin Turbo Suzuki as well as anything else: speed to spare. And with acceleration that seems never to end. True, some of the GS1100's legendary locomotive-class low-end torque has been forfeited; but once you feel the indescribable way in which this bike launches you through space as though you were straddling a runaway rocket; once you experience acceleration so fierce that you begin to seriously doubt your ability to hang onto the thing—and you're *already* going 120 or 130 mph; once you know the incomparable sensation of riding a motorcycle that's so fast you wonder how the paint ever stays on, you'll probably never miss the lost low-rpm torque.

Actually, we're optimistic that by the time Behn is finished tweaking and tuning on the turbo system and gets it on the market, very little of that precious bottom-end power will have been sacrificed at all. While he's doing that, we'll be busy rectifying a few minor reliability problems we encountered, most of them concerning oil cooling and retention, and fuel delivery. But the most exciting refinement planned for this bike is what Behn calls Dial-A-Boost. It's his version of the system used on Indianapolis-type cars that allows the driver to select the amount of boost he wants simply by turning a knob on the dashboard. Behn's system will use a regulator knob on the handlebar that will pneumatically vary the point at which the wastegate opens. The rider will be able to adjust the boost from anywhere between 0 psi and well over 30 psi—the maximum capacity of the turbo system—at his discretion. And that's something the rider will need plenty of if he intends to turn that knob all the way.

We'll report on all of this, of course, once everything is finished, complete with drag-strip numbers and a revised maximum top-speed figure. We're shooting for quarter-miles at least in the low tens and for nothing less than a top speed of 180 mph. But even if we succeed we won't be satisfied. Because it's just like we've said all along: This motorcycle already is incredibly—no, ridiculously—fast.

But it still isn't fast enough. •

Twin Turbo

SPECIFICATIONS:

DESIGNER: Cycle Guide Magazine
1440 West Walnut Street
Compton, California 90220

CATEGORY: street

SUGGESTED RETAIL PRICE: $9260.45 as tested

ENGINE
Type ..... turbocharged four-stroke transverse vertical four
Valve arrangement ..... double overhead camshafts, four valves per cylinder
Bore and stroke ..... 74.0mm x 66.0mm
Displacement 1135.4cc
Compression ratio 7.5:1
Carburetion ..... one two-barrel Weber 44DCNF downdraft
Air filter ..... washable oiled foam element
Lubrication ..... wet sump
Starting system ..... electric only
Ignition ..... transistorized breakerless
Charging system ..... 12-volt; alternator, voltage regulator, rectifier

DRIVETRAIN
Primary drive ..... helical gears; 1.776:1 ratio
Clutch ..... wet, multi-plate
Final drive ..... #630 chain (3/4-in. pitch, 3/8-in. width); 2.800:1 (15/42) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.500	12.429	6.1
II	1.778	8.838	8.5
III	1.381	6.865	11.0
IV	1.125	5.593	13.5
V	0.962	4.780	15.7

SUSPENSION/WHEEL TRAVEL
Front ..... air-spring, 37mm stanchion tube diameter 4-way adjustable spring preload, 4-way adjustable rebound damping/6.0 in. (152mm)
Rear ..... 5-way adjustable spring preload, 4-way adjustable rebound damping/4.5 in. (114mm)

BRAKES
Front ..... dual single-action hydraulic calipers, 10.8-in. (275mm) discs
Rear ..... double-action hydraulic caliper, 10.8-in. (275mm) disc

TIRES
Front ..... 3.50V19 Metzeler Perfect ME77 Sport
Rear ..... 4.50V17 Metzeler Perfect ME77 Sport

DIMENSIONS AND CAPACITIES
Weight ..... 548 lbs. (249kg)
Weight distribution ..... 48.4% front, 51.6% rear
Gross vehicle weight rating (GVWR) ..... 1030 lbs. (467kg)
Wheelbase ..... 60.0 to 61.2 in. (1524 to 1554mm)
Seat height ..... 32.3 in. (820mm)
Handlebar width ..... 27.6 in. (700mm)
Footpeg height ..... 13.0 in. (330mm)
Ground clearance ..... 3.6 in. (91mm), at exhaust pipe
Steering head angle ..... 28.0 degrees from vertical
Front wheel trail ..... 4.1 in. (103mm)
Frame ..... tubular mild steel, double front downtubes
Oil capacity ..... 3.6 qt. (3.7/)
Fuel tank ..... steel, 4.8 gal. (18.0/), including 1.5 gal. (5.5/) reserve
Instrumentation ..... speedometer, tachometer, odometer, tripmeter resettable to zero, fuel gauge, turbo boost gauge

PERFORMANCE
Top speed with stock gearing (calculated) ..... 141 mph (227 kph)
Top speed with 15/31 gearing (observed) ..... 173 mph (278 kph)

All weights and measurements are taken with machine unladen and fuel tank empty

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MINITEST:

Kawasaki KZ650CSR

Your order, served on a sesame-seed budget.

• Consider the Kawasaki KZ650CSR as a product designed to be sold. Strange as it might seem, consider it. The idea is to decide what everyman wants in a motorcycle and then sell it to him. A bold move, considering that some—perhaps many—buyers don't know what it is that they really want.

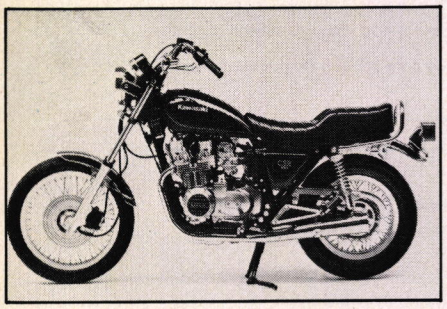
Because the move is not only bold but important, Kawasaki's market thinking deserves some reflection. "This all-new bike has three design goals: looks, performance and a budget price." That same thinking also carries over to 1000cc, 305cc and 250cc CSRs, which are further defined as: "LTD-like motorcycles with special appeal for economy, simplicity and first-time buyers. The new Kawasaki CSRs are feature-up, price-down street motorcycles with a uniquely Kawasaki appeal." Feature-up, price-down. High style for low bucks. An affordable street cruiser for everyman.

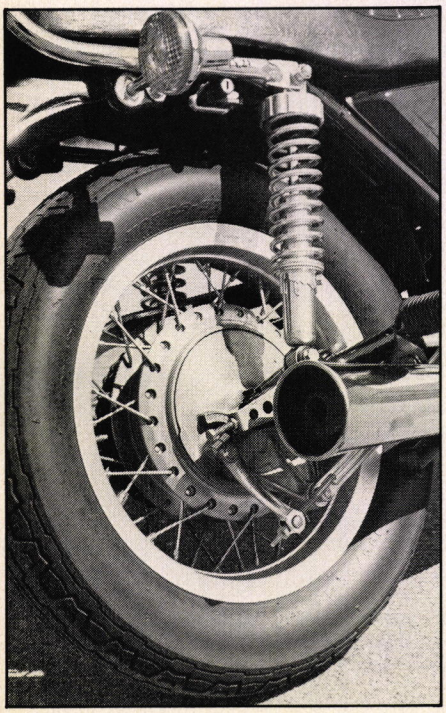
But before you dismiss the CSRs as motorcycles lubricated by snake oil, take another look at the 650. It certainly has a lot of what marketing types refer to as price/value. The bike was introduced at a special price of $2499—a bargain that was, unfortunately, not "suggested retail." It now retails for $2649. Even so, that's $350 less than the KZ750 LTD and only $230 more than the KZ550 LTD. And this 650 is now the only one that Kawasaki offers for U.S. sale.

It is also no stripper, despite its price-down claims. The most visible adornments—aside from the factory-custom style—are the 48-spoke aluminum rims front and rear. The leading-axle fork is air-spring, the rear suspension features five preload positions and four damping adjustments, and there is electronic ignition, a dual-density seat, fuel level/brake light warning indicator and tapered roller bearings in the steering head. All worthwhile stuff. Equally worthwhile—and in keeping with the "uniquely Kawasaki" aspects of marketspeak—the 650's engine is the traditionally strong, smooth motor that riders have come to expect from Kawasaki.

But to keep the price down, a few items went by the wayside. The brakes, for example, are a single disc front/drum rear combination. Further, the 650 sits on tube-type tires, and it lacks such amenities as an electronic speedometer, self-canceling turnsignals and a quartz-halogen headlamp—all of which are found on LTD models.

Although the 650 CSR is low on frills, it isn't a stripper by any stretch of the imagination. Fenders, headlight shell and chain guard are chromed, the alloy rims look good, 96 whirling spokes look great and the front turnsignals clip onto the handlebar *a la* Harley-Davidson. Exactly what everyman ordered. Beyond that, the functional aspects are what you'd expect from a modern, well-





A fat tire helps the street-cruiser look

Full-width drum brake keeps costs down.

PHOTOGRAPHY © 1981 PATRICK BEHAR

put-together street bike. The 650 runs, goes, stops, rides and handles with competence, and its suspension adjustability allows a dial-it-yourself ride.

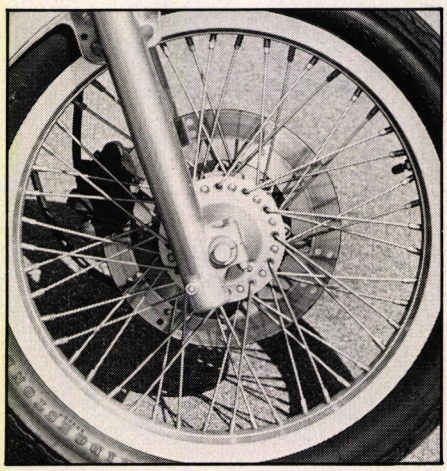
Unfortunately, in comfort the 650 is pretty much what you'd expect as well. It's a factory street cruiser. The rider's portion of the CSR's stepped seat is fairly short, and jams riders over 5-foot-6 forward over the pegs, where the pullback handlebar ends up more or less in the rider's lap. The result is—again as you'd expect—sort of a modified fetal position with all of the rider's weight concentrated at the base of his spine. The position is fine for about 20 miles or for low-speed riding; but longer rides leave a sure case of numbutt, and since the rider is sitting bolt upright into the wind, higher speeds give a thorough workout to the lats, traps, delts and biceps. For squirting around town it's dandy, but if you're in for miles of open road, you might end up feeling like you just crawled out of a gym.

Few CSR buyers, however, will care. And why should they? The CSR 650 is a street cruiser designed to help out the budget. And more than likely, that's what everyman has been asking for. —*Don Fuller*

KAWASAKI KZ650CSR

Importer: Kawasaki Motors Corporation
2009 East Edinger Avenue
Santa Ana, California 92711

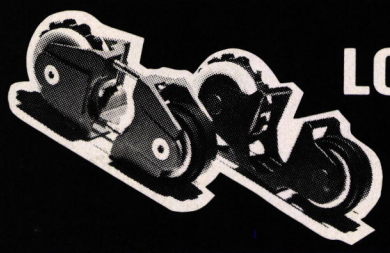
Category	street
Suggested retail price	$2649
Engine type	four-stroke transverse vertical four
Valve arrangement	double overhead camshafts
Bore and stroke	62.0mm x 54.0mm
Displacement	652.1cc
Compression ratio	9.5:1
Carburetion	four 24mm Mikuni slide/needle
Gearbox	5-speed
Front fork/wheel travel	36mm stanchion tube diameter/6.8 in. (173mm)
Rear shocks/wheel travel	4-way adjustable rebound damping, 5-way adjustable spring preload/3.7 in. (94mm)
Wheelbase	57.0 to 57.8 in. (1448 to 1468mm)
Seat height	30.5 in. (775mm)
Weight	473 lbs. (215kg)
Top speed (calculated)	116 mph (187 kph)
Warranty	6 months
Available colors	Ebony or Sundance Blue



The CSR only has a single front disc

But you get more spokes for your money.

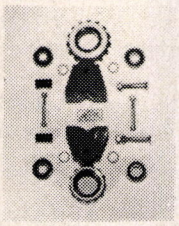
A-TRAK, MORE TRACTION



LONGER TIRE LIFE

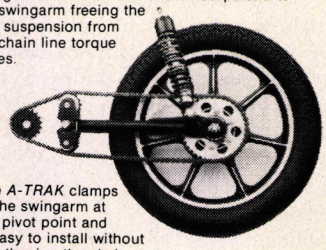
GREATER SAFETY

SIMPLE TEST: Run the front wheel of your motorcycle up against a solid object and simulate taking off by letting the clutch out and feeding in some throttle. You will notice that the rear end of the bike will rise and that the suspension will become very stiff.



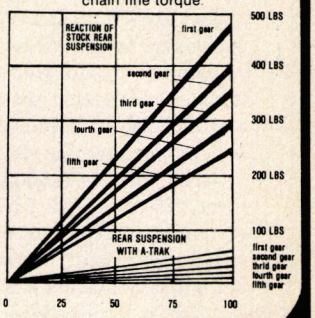
The *A-TRAK* has four oversized double-sealed bearings and is constructed of all heavy duty materials to insure long life.

Normally the chain is running at an angle to the swingarm. The *A-TRAK* removes this force triangle as the chain now runs almost parallel to the swingarm freeing the rear suspension from the chain line torque forces.



The *A-TRAK* clamps to the swingarm at the pivot point and is easy to install without lengthening the chain.

Forces on the suspension from chain line torque



CYCLE MAGAZINE PRODUCT EVALUATION: "If you thought suspension design has reached its zenith, the *A-TRAK* system will send you back to the books. The first trip throught the corner with the *A-TRAK* system was an eye opener...early acceleration becomes a less intense task, the bike becomes easier to control in a sliding situation. For individuals the *A-TRAK* system can in fact make their motorcycling safer."

MOTORCYCLIST MAGAZINE, TECHNICAL EDITOR, JOE MINTON: "Horst Leitner has defined and found an elegant solution to a problem that none of us knew we had. The *A-TRAK* works. It does everything claimed for it. I am not sure that I would want to own a bike that did not have this remarkable device."

RIDER MAGAZINE PRODUCT TEST: "Our riding experience and testing on a GS 1000 Suzuki convinced us the *A-TRAK* system is an important breakthrough in rider safety and comfort. It was discovered that in the turns we could accelerate without hesitation because full rear wheel contract with the road is always available, even on bumpy and slippery surfaces."

CYCLE NEWS PRODUCT EVALUATION: "We came away impressed with the *A-TRAK*. For the average rider, it makes the rear suspension work the way it never could before. A staffer here had an *A-TRAK* installed on his Yamaha and swears by it, saying it allows him to come off the corners faster due to improved traction."

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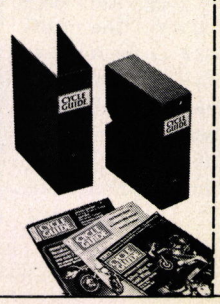

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PRODUCT EVALUATION:

Jones Competition Goggles

In an expensive class of its own.

• Would you pay $55 for a pair of motocross goggles, or $30 just for the lens? The price sounds crazy, but it might be defensible when you discover what you get when you pay that much for a pair of Jones Competition Goggles.

Just like a Rolls Royce, Porsche-Design sunglasses or a Lear Jet, you do receive something extra for your outlay. Included is a special lens that not only outlasts everything else we have ever tried, it works better than anything else, too.

Jones' special Carbonite lens is molded from .075-inch-thick polycarbonate rather than stamped from a flat sheet. The lens can withstand the impact of a 22 caliber bullet, and Jones is so confident of its product it gives a one-year guarantee against breakage. But an extremely rigid lens alone would not be enough to justify the hefty price tag. What really adds on the dollars, but also drastically increases the lens' life, is a 7-micron-thick coating of glass on the front surface. Cheaper die-cut lenses cannot use this process coating because the glass won't adhere to the less-rigid surface.

This glass coating gives the Jones lens superior scratch resistance. During two and one-half months of dirt riding we didn't need to replace a single lens. Indeed, our heavily-used Jones lens looks like most lenses do after just one race. But even better than the way the lens protects your eyes from flying rocks, you'll appreciate the way it shields you from the sun's rays.

A coating of cadmium oxide gives the Competition goggle lens a dark black color that absorbs most all the ultraviolet and infrared radiation the sun can offer. Your eyes really do feel relaxed behind the lens. You can also read terrain very well in bright sunlight and, if you have to ride among the trees, the lens rarely gets too dark. It won't fog up, either, because the rear surface of the lens is coated with an anti-fogging agent.

All these trick features would be of little use if the frame of the goggle didn't fit comfortably. The Jones goggle isn't unpleasant to wear, but it's not the most comfortable eye protector on the market because its frame is made of a harder-than-normal plastic. Jones claims that the more-rigid plastic is a safety feature that keeps the lens away from the eye in the event of impact. The frame also protrudes farther from the face than on most goggles, which slightly restricts peripheral vision.

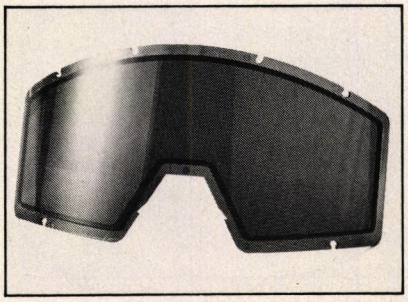
The major problem we found with the goggle was that after extended use the foam on the upper edge of the frame collapsed enough to allow contact with the face. The goggle never leaked dirt, but Jones claims to be working on improved foam quality.

But not even a Rolls Royce is perfect, and the Jones goggle offers enough extra features—including its distinctive black color—to make it a justifiable choice for dirt riding. And if you like the goggle but not the price or the black color, you can choose the $35 Pro model which comes in a wide range of colors and accepts the full line of tinted, but not coated, Jones lenses. Whichever Jones goggle you choose, you'll feel a part of that small group that drives to the race in a Rolls and flies home in a Lear.

—David Dewhurst

Polycarbonate lens protects eyes from flying rocks and ultraviolet rays

But the price of protection makes it hard to keep up with the Jones'.



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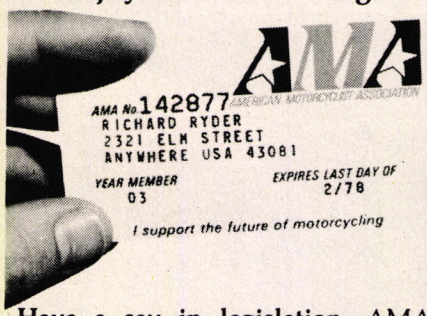

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GS-1000S KATANA

This is no ordinary motorcycle. Obviously.

Indeed, the Katana is a very special machine created for a very special breed of sports riders.

Riders who see beauty in the essence of, say, a Formula One racing machine.

Brilliantly designed, the Katana integrates high-performance technology with aerodynamic bodywork. So the result is a harmonious blend of form and function.

Its technological advances are too numerous to mention here. Just a small sampling includes: Anti-dive forks. Adjustable damping shocks. And new-era 16-valve TSCC engine.

Yes, the Katana is very special.

So special that only a limited number are available. But the bold thinking that went into this remarkable machine is reflected in all 1982 Suzuki motorcycles. And, all look as great as they perform.

You can judge for yourself. Because the '82 Suzuki performers are starting to arrive now.

Go see them at your Suzuki dealers.

SUZUKI®

TRACK TEST:

Suzuki RM250X

Suzuki gets the last word.

BY RON LAWSON

By all rights, Suzuki's RM250X shouldn't be a success. After all, that the bike was released five months late should have been its death knell. No motocrosser wants to buy an '81 racer when everyone else is already thinking about the '82s.

The marketing deck was being stacked against the RM as far back as December 1979 when Honda officially joined the single-shock ranks of Yamaha and Kawasaki at the Anaheim Stadium Supercross. Suzuki was left standing outside the door of the exclusive single-shock clubhouse holding a once-successful but now hopelessly out-of-vogue twin-shock invitation. And anything that the company could produce at that late date would be tainted with the appearance of a "me too" effort.

But, with an attitude of better late than never, Suzuki jumped on the bandwagon and unveiled the Full Floater at the mid-way point in the 1980 nationals. Delays in development were followed

by delays in production, but the machine was, eventually, ready for sale. Then came yet another obstacle. A young inventor filed a lawsuit claiming that the Floater was actually his own creation.

With the case still pending in court, Suzuki heaved a corporate sigh and fed limited numbers of the RM250 to its dealers. The first ones practically evaporated as they hit showroom floors. It turned out that what could have been—by conventional standards *should* have been—a market disaster was actually the most eagerly awaited motocrosser of the year.

The reason for the RM's surprising success lies not in any marketing text but in the bike itself. Word spreads quickly at the racetrack. And the word was that the new RM had the suspension and the handling to make it the straight-from-the-box winner that motoconsumers endlessly search for.

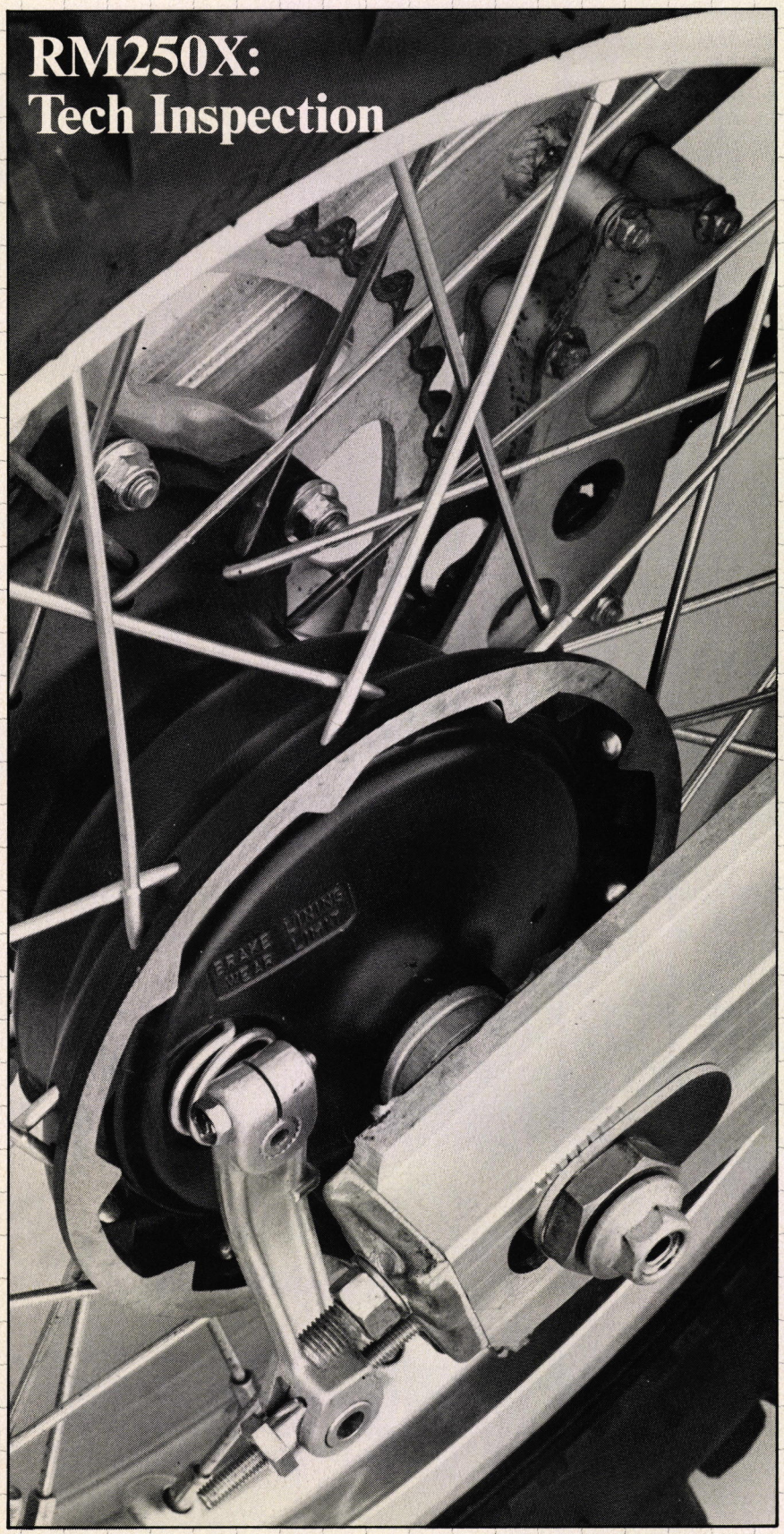
Part of the bike's appeal comes from the fact that it is totally new. The development didn't stop with the new rear suspension but kept right on going, combining futuristic ideas with existing techniques like the conventional reed valve inlet which Suzuki had chosen not to use in the past. The technology that the Suzuki sums up makes it a hard package to resist.

But there are those who will say that the very factors that should have spelled the downfall of the Suzuki were responsible for its success. In the public's eye, any motorcycle in the works so long is shrouded in mystery and is bound to be the greatest thing on two wheels. The RM's early racetrack reputation might simply be the product of an overactive motocross imagination.

Either way, the question remains: Was it worth the wait?

Continued

RM250X: Tech Inspection



PHOTOGRAPHY © 1981 VIC HUBER

Suzuki uses straight-pull spokes to lace a stronger rim to a full-width hub

A well-engineered way of keeping your wheels true to you.

Engine:

Top End: Suzuki has abandoned its patented Case Reed induction system in favor of the more popular all-reed design. The 2mm-larger 38mm Mikuni carb now feeds fuel through an eight-petal reed block. Once inside the motor, fuel passes through two small circular and one oblong port directly into the crankcases as well as through a bridged inlet and a new ported piston. Suzuki claims the all-reed design reduces intake turbulence. The motor has unchanged bore and stroke dimensions, but does have a new cylinder head with offset combustion chamber for increased performance. Compression is upped 0.2 to 8.1:1.

Bottom End: New crankcases combine a rear motor mount and swingarm pivot.

Drivetrain:

Primary Drive: Revised heat treatment of the gears is the only change to the primary drive of the RM250X. Gear ratios and the clutch are unchanged.

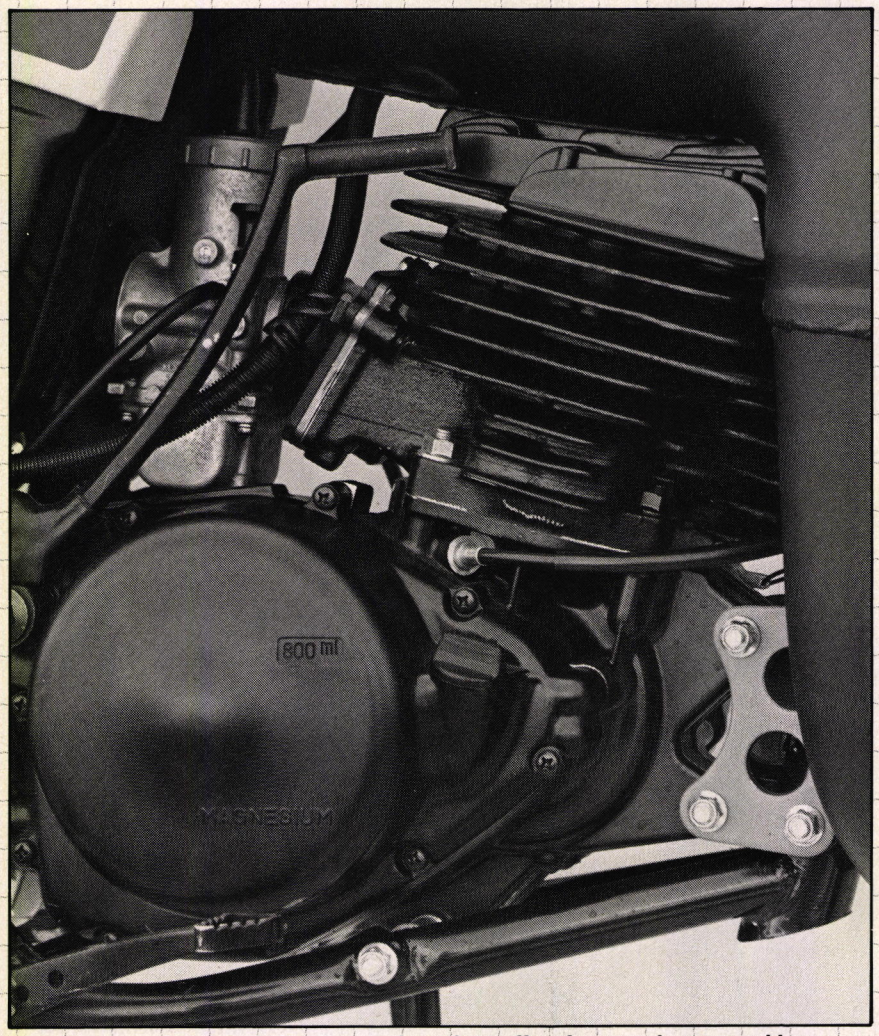
Gearbox: Internal gear ratios are unaltered from the T-model, but heat treatment is upgraded for longer gear life.

Final Drive: The rear wheel sprocket gains one extra tooth while the countershaft remains unchanged, giving a tooth count of 14/50.

Suspension:

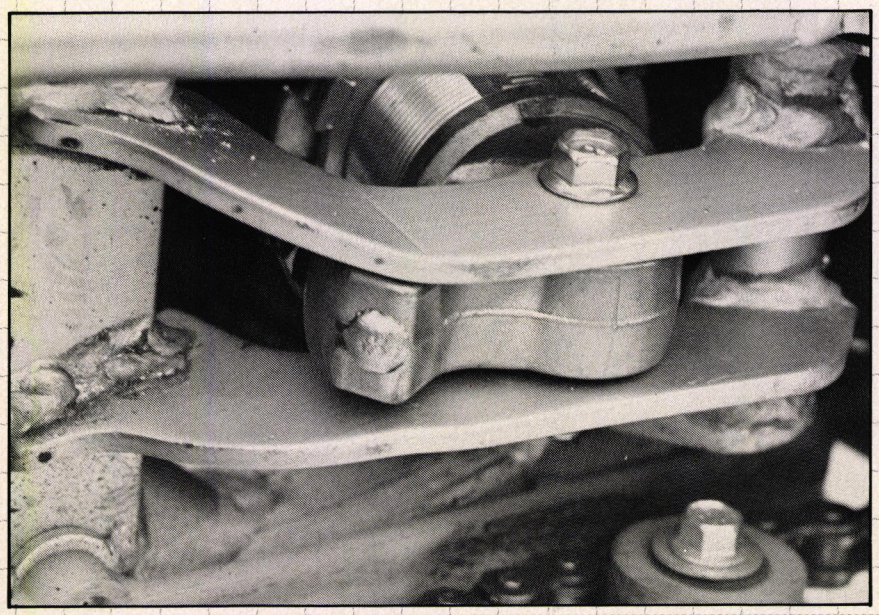
Front: The 38mm fork has the same stanchion tube diameter and the same wheel travel as the T-model. The fork no longer uses air assistance, instead relying on a short straight-rate spring with a long preload spacer. The new spring/spacer combination is lighter than last year's long spring arrangement, and a greater air volume produces less progression in the overall wheel rate.

Rear: Dispensing with the old twin-shock system, Suzuki uses its new Full Floater design which is shared with both the 125 and 465 models. The box-section aluminum swingarm is connected by steel links to an aluminum rocker which compresses the top end of a Kayaba shock. The shock's bottom eye is mounted to the swingarm so that both ends of the shock are compressed as the suspension moves. Wheel travel is increased 20mm over the T-model.



Euro-Japanese slow-revver has a strong heart but suffers from respiratory trouble

Restrictive airbox strangles efficient eight-petal Full-Reed induction.



The bottom of the Kayaba shock mounts directly to the extruded aluminum swingarm

The Full Floater takes the pressure from both ends.

Wheels:

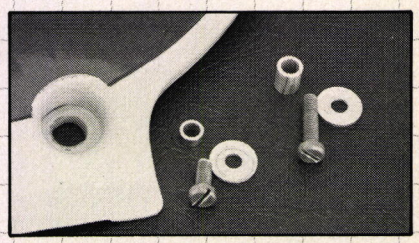
Stronger hubs are laced to redesigned Takasago rims with straight-pull spokes. The front hub has the same 150mm diameter as last year's, but the rear hub is 10mm smaller at 130mm. Both wheels are shod with Dunlop K390 tires.

Frame:

The Full Floater chassis shares nothing but its 4130 chromoly steel with last year's T-model. Wheelbase is increased 15mm with 1mm less trail and 0.5 degree less rake. Ground clearance increases 10mm and seat height is reduced 30mm. A new box-section extruded aluminum swingarm has axle adjuster blocks located inside the arm. A single bolt and nut at the rear of the arm moves the block and axle to adjust the chain.

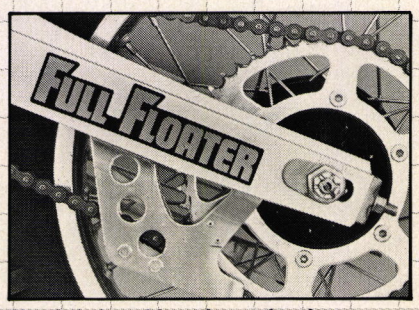
Details:

Twin dual-stage air filters, each mounted vertically on either side of the shock, are connected by a common plenum chamber. Softer rubber chain rollers and a fixed chain guide on the swingarm are claimed to reduce noise and increase chain life. A new humped gas tank has a 0.5-liter greater capacity.



Straight-slot screws don't clog with mud

But too many parts are too much hassle.



Fixed chain guide reduces the clatter

Chain adjusters move inside swingarm.

Continued

Suzuki RM250X: Will It Win?

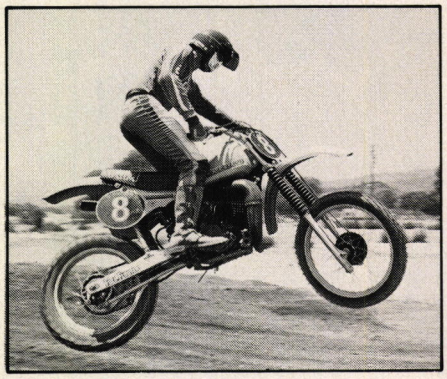
• At first glance, the Suzuki RM250X seems to be the antithesis of a European motocrosser. The plastic-flash, yellow-and-blue RM poses a sharp contrast to a Husky's stark lines or the sand-cast look of a Maico. But appearance is as far as the contrast goes—because once on the track, European thinking shows in the way Suzuki attacks the problem of winning races.

The RM doesn't produce the kind of hyper-rpm acceleration that Yamaha and Honda have trained riders to expect in 250cc motocrossers. Its power delivery is strictly European. Solid low-end builds through average mid-range to an unimpressive climax, but the RM puts all of its power on the racetrack. That means *usable* power. The kind that enables it to get to the first turn ahead of the rest of the spinning, digging and fish-tailing pack. In dragrace after dragrace, the stock RM beat a YZ250H to the first turn on a tractionless uphill start. The YZ was a blatantly stronger machine, but its power was wasted in rear-wheel spin while the Suzuki's gradual power delivery let it track straight up the hill and put it on top every time. The story changed in the Yamaha's favor once the duel was transplanted to level ground, though. The YZ's horsepower advantage put it on top whenever it could hook up with perfect traction.

It isn't until track conditions get really poor that the Suzuki becomes the star of the class. The RM thrives on the driest, gnarliest courses, owing credit in part to the European powerband and in part to the rear suspension. The Full Floater doesn't quite have the plush feel of a Honda Pro-Link over light, choppy braking bumps, but it shines on the big stuff. When it comes to giant killer-whoops the Suzuki can consistently keep its rear wheel on the ground pumping out power when other bikes are clawing at empty air.

Suzuki engineers had the advantage of being able to see what was working on other single-shockers before starting on the Full Floater. Starting with linkage similar to Kawasaki's, Suzuki added Honda's rising-rate concept and then threw in a few ideas of its own. The result marks a new high for Japanese off-road suspension.

Unfortunately, the outstanding rear end is paired with a merely average fork. Last year it might have been sufficient to use 38mm tubes, but the high-fashion world of motocross is constantly changing, and to keep up, Suzuki will soon have to go to 43mm units such as the ones fitted on the RM465. It isn't that the 250's fork flexes intolerably, but as a motocrosser gets older its fork gets weaker. And with a half-season of racing on the 38s, flex can become a serious problem. Overall action on the Kayabas is typically Suzuki, which is to say good. But the fork's performance is marred by high seal friction and overdamping. This is especially noticeable in rough turns where the front wheel skips over small holes, encouraging wash-out.



The problem is compounded by both a poor front tire selection and quick steering geometry. It isn't a major problem in every turn, but the sensitive steering can put too heavy a burden on the front Dunlop K390. Almost losing the front end in a high-speed sweeper isn't the kind of experience you need when trying to devote 100 percent of your concentration to a race.

But despite its few shortcomings, the RM is a commendably well thought-out racer and, hopefully, the first of a new breed. It marks the first confession from Japan that perhaps there is another way to build a motocrosser that doesn't require semifunctional gimmicks and razor-thin powerbands. But you will have to look closely for that confession. It's hidden under the plastic. —*Ron Lawson*

BETTER THAN STOCK:

Suzuki RM250X

Raising the standard.

• The RM250X is without doubt one of the most race-ready motocross machines to come out of Japan. It is so well thought-out, in fact, that its few flaws seem amplified—hardly worthy of notice on some other machines, perhaps, but crying out for correction on the RM.

The 250 uses every ounce of its controllable motor, but a restrictive airbox and rich jetting rob the bike of potential horsepower. This isn't a problem on gnarly tracks, but to avoid being outdragged on the smoother surfaces we headed for White Bros. Cycle Specialties of Garden Grove, California for an aftermarket airbox. The $89.95 airbox is imported from Twin Air of Holland and lets the RM breathe more easily. For an additional $10, White Bros. went through the carb, first installing an idle-speed adjuster, then rejetting.

With the engine in better trim, we turned to the suspension. Again, White Bros. supplied the fix. The fork received a new set of damper rods designed to work with the stock springs. The kit increased travel one-half inch and changed the valving to reduce rebound damping—for a cost of $45.

The rear suspension was given the White Bros. touch as well. The stock reservoir was replaced with an extruded unit that features both larger oil and nitrogen volume. It costs $74.95, plus $15 if White Bros. installs it. We didn't opt for the total shock rework, but that, too, is available for an additional $50.

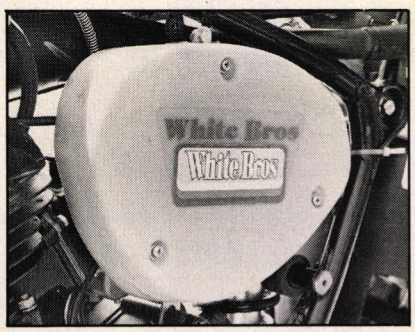
Rear end changes continued with the installation of adjustable aluminum Floater struts to connect the swingarm to the rocker arm. The struts enable a knowledgeable rider to finely dial-in the bike for differing riding conditions. Racers have long been using the same idea on the front fork by raising and lowering the stanchion tubes in the triple clamps. The struts are adjustable by one-half inch, and we set our struts to one-eighth inch shorter than stock and raised the stanchion tubes by the same amount. You'll pay $59.95 to make these changes, but we found that altering the bike's attitude provided a noticeable improvement.

The greatest change came through the use of aftermarket tires. We frequently use Metzelers on test bikes, and knew from experience that a 110/90-18 would work wonders on the rear. We were just as impressed with the new K139 front tire from Dunlop. Both tires work exceptionally well on any surface.

We finished the RM by indulging in the trick little bits and pieces that don't make you go faster but can save damage in a fall. Off came the old-fashioned twistgrip and on went an all-new Gunnar Gasser that carries a suggested retail price of $19.95. A White Bros. folding shifter also went on, satisfying our trick-lust for $17.50.

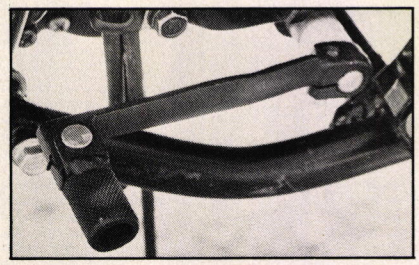
The end result of all these changes is a faster, more nimble RM250. With the new airbox in place, our reworked RM still isn't the fastest bike in the class, but it no longer gives up ground noticeably from turn to turn. And anything it loses can be easily regained in the turns because the new Dunlop works with the fork kit and Floater struts to eliminate the front-wheel pushing that we noticed on the stock RM.

Truthfully, the RM doesn't need any of these changes before it can win. As it sits, it is one of the most potent motocrossers on the 250cc shelf—which is why we made the improvements. It deserves a shot at being the best. —*Ron Lawson*



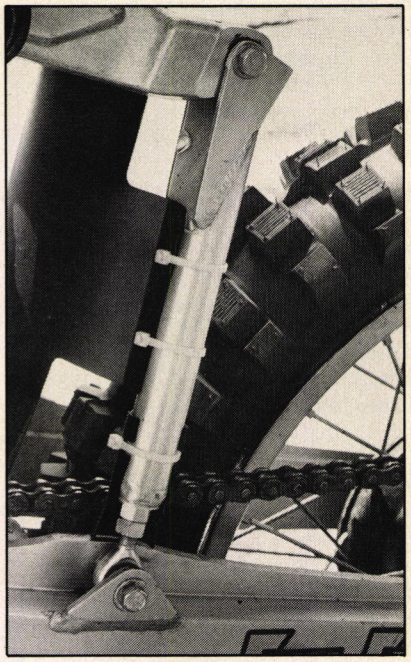
White Bros. airbox improves breathing

Twin-Air marketed by twin brothers.



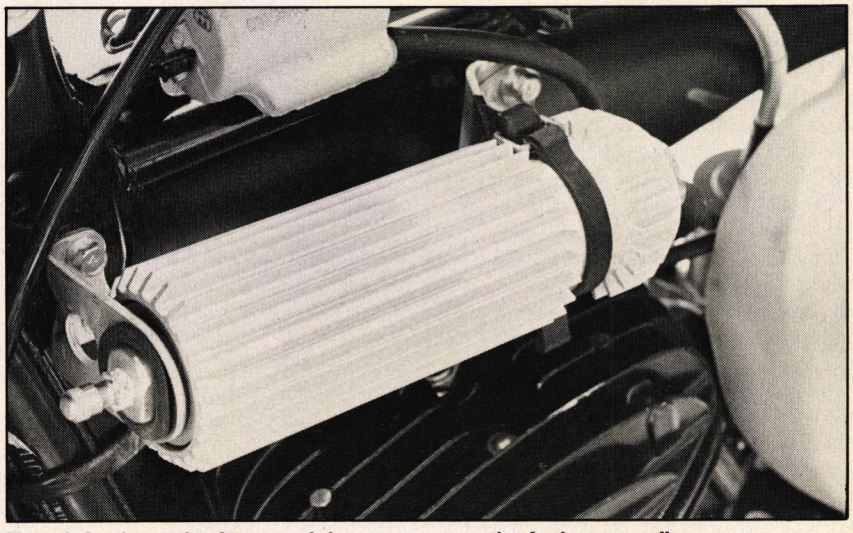
Slick shifter saves shafts

Stocker doesn't fold under pressure.



Adjustable aluminum Floater struts

So the RM can strut its real stuff.



Finned aluminum shock reservoir has greater capacity for better cooling

Steel braided hose and a completely reworked shock are also available.

PHOTOGRAPHY © 1981 DAVID DEWHURST

Continued

Ride Review

• You don't need to hard-sell me. You could even charge me the full retail price and I'd probably still go out and buy an RM250X. I've bought enough Suzukis in the past to be classed as an RM freak, so it was not surprising that I should fall seat-over-handlebar in love with this new bike.

Suzuki has gotten the X-model to turn even better than the last RM I owned, and the motor pulls so strongly it makes my Scott boots curl. OK, maybe I am over-reacting just a little. Maybe the new RM does have a few little problems and maybe there are some bikes that are as fast or handle as well. But after all, I am a Suzuki freak. Like so many racers out there I am loyal to a brand and I will need some pretty strong reasons to change my preferences. Suzuki hasn't helped any, because the X-model is as good a reason as any for not changing brands.

—Dean Taylor

• Sometimes it can be hard having to test a bone-stock machine. Especially a motocrosser. Take Suzuki's new RM250X for instance; the best rear suspension in the business and general excellence everywhere you look. Almost. I mean, I couldn't wait to slip on a new set of tires, grips, an airbox that breathes and a correctly jetted carb to produce the real performer I knew was in there somewhere.

OK, so you're saying all that stuff gets scrapped on a new machine anyway, so what's the point? The point is, I have to race test this bike in its stock form before I can swap components, and I'm not about to tell you what the bike was like before the changes. Such a good bike doesn't deserve harsh criticism when such simple cures are available. Now, if I could just get those stickies to stay on the tank. . . .

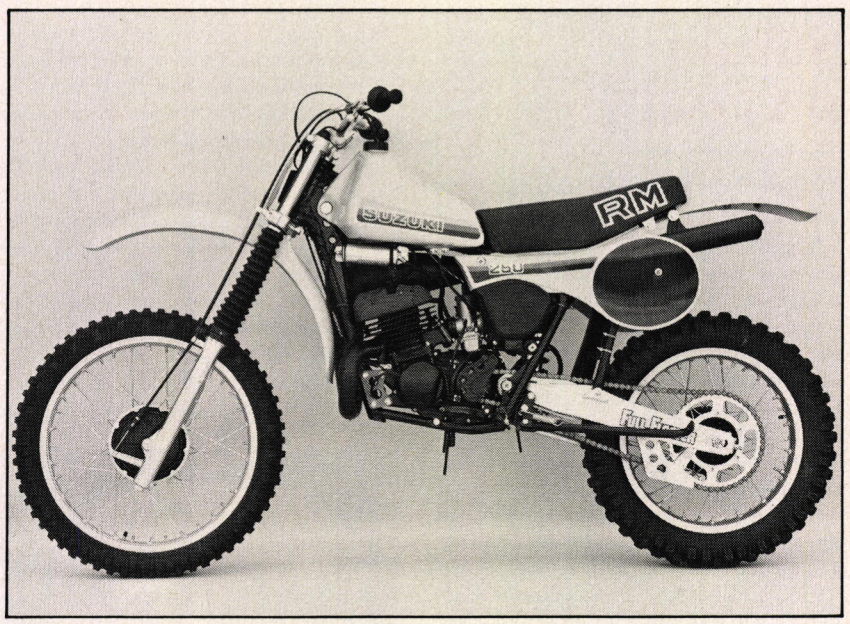
—Mark Diotte

• I've enjoyed riding every one of Suzuki's new X-model RMs, but the 250 was my least favorite. That's not to condemn the mid-size Suzuki, far from it, but as it comes from the crate the 250 lacks something. It does not turn with the precision of either the 125 or 465 and its fork always feels a little harsh. The motor, too, is nothing exceptional, with a healthy mid-range but no top-end.

All these problems went away when we bolted some basic aftermarket equipment to the bike. With Metzeler and Dunlop tires, a fork kit, shock reservoir and airbox from White Bros., the RM250X was transformed. It no longer skitters about on its stock tires and the front end is almost a match for the rear. All of a sudden I have a new favorite RM—and a favorite 250cc motocrosser, too.

—David Dewhurst

Suzuki RM250X



SPECIFICATIONS:

IMPORTER: U.S. Suzuki Motor Corporation
3251 East Imperial Highway
Brea, California 92621

CATEGORY: motocross

SUGGESTED RETAIL PRICE: $1979

ENGINE

Type	two-stroke vertical single
Port arrangement	one reed-valve-controlled intake, six transfers, one exhaust
Bore and stroke	67.0mm x 70.0mm
Displacement	246.8cc
Compression ratio (corrected)	8.1:1
Carburetion	one 38mm Mikuni slide/needle
Air filter	twin dual-stage washable oiled foam elements
Lubrication	pre-mixed fuel and oil
Starting system	primary kick
Ignition	internal-rotor magneto CDI
Charging system	none

DRIVETRAIN

Primary drive	straight-cut gears; 2.727:1 ratio
Clutch	wet, multi-plate
Final drive	#520 chain (5/8-in. pitch, 1/4-in. width); 3.571:1 (14/50) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.076	20.216	3.8
II	1.750	17.042	4.5
III	1.352	13.166	5.9
IV	1.105	10.761	7.2
V	0.913	8.891	8.7

SUSPENSION/WHEEL TRAVEL

Front	air-spring, 38mm stanchion tube diameter/ 10.5 in. (227mm)
Rear	Full Floater, 4-way adjustable rebound damping, 25mm spring preload adjustment/11.3 in. (287mm)

BRAKES

Front	drum, single-leading shoe
Rear	drum, single-leading shoe, straight-pull cable-operated

TIRES

Front	3.00 x 21 Dunlop Sports K390
Rear	5.10 x 18 Dunlop Sports K390

DIMENSIONS AND CAPACITIES

Weight	219 lbs. (99kg)
Weight distribution	47.0% front, 53.0% rear
Wheelbase	57.5 to 58.0 in. (1460 to 1473mm)
Seat height	38.0 in. (965mm)
Handlebar width	33.5 in. (851mm)
Footpeg height	16.8 in. (427mm)
Ground clearance	14.0 in. (356mm), at engine cradle
Steering head angle	29.5 degrees from vertical
Front wheel trail	4.8 in. (122mm)
Frame	tubular chromoly steel, single front downtube
Fuel tank	plastic, 2.2 gal. (8.5/), no reserve
Instrumentation	none

PERFORMANCE

Top speed (observed)	77mph (124kph)

WARRANTY: none

AVAILABLE COLORS: yellow

All weights and measurements are taken with machine unladen and fuel tank empty

COMPARATIVE TEST DATA:

Make & Model	Horse-power	Wheel Travel Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias Front/Rear percent	Transmission number of speeds
Suzuki RM250X	NA	10.5/11.3	219	47.0/53.0	5
Kawasakai KX250 A6	26.8	11.3/11.2	230	45.6/53.5	5
Honda CR250R-80	27.5	11.6/11.7	222	47.0/53.0	5
Yamaha YZ250G	27.5	11.6/11.7	217	46.5/53.5	6
Can-Am 250 MX-5	32.1	10.8/10.0	218	45.9/54.1	5
Husqvarna 250CR-79	24.3	11.8/11.8	227	44.5/55.5	5

MINITEST:

Honda CB400T Hawk

New duds and suspenders for The Best.

• The best under-500cc sportbike comes in two colors—black or silver—and is available in Honda dealerships. It's the CB400T, better known as the Hawk.

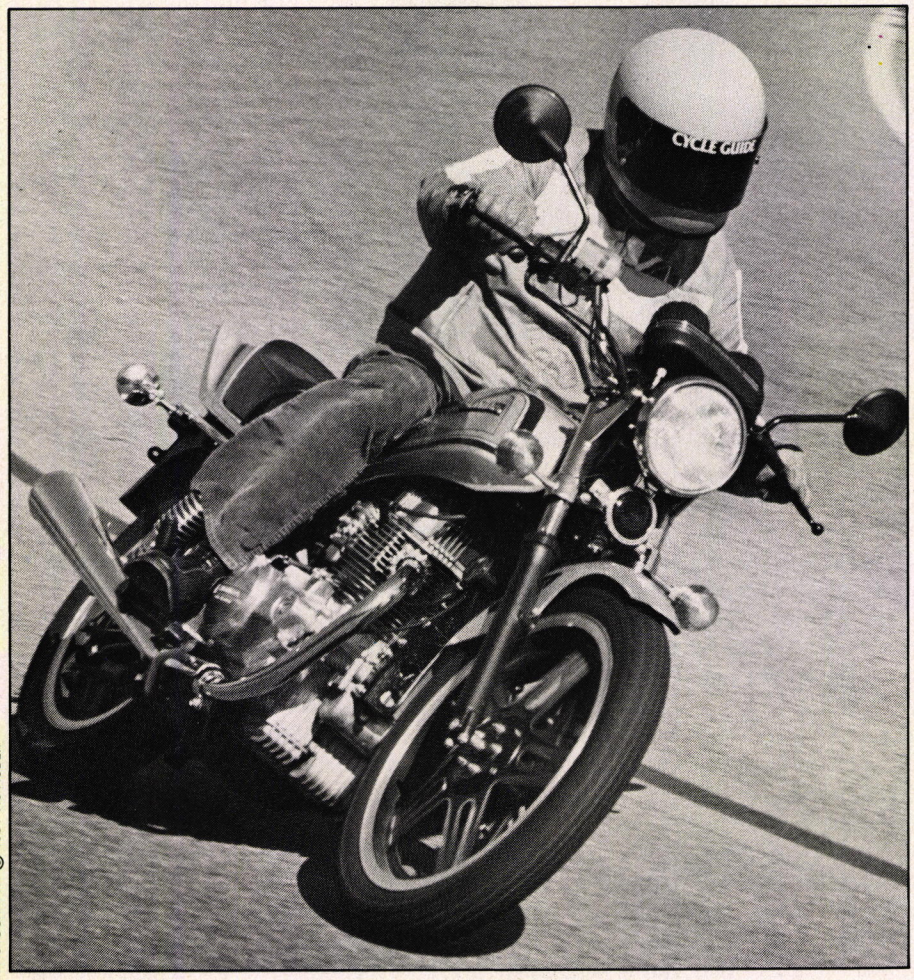
Picking the best isn't easy, either. There are some bikes in this displacement category that are either faster or quicker, and some will argue that the Hawk isn't the absolute best-handling under-500cc sportbike, either. But best in individual talents doesn't necessarily translate to best overall, and there the Hawk is the *best*.

The reasons why the Hawk carries off the honors are several, and most haven't changed since last year's model. As ever, the Hawk's 395cc twin-cylinder engine runs smoothly from idle to its 10,000-rpm redline, thanks to a set of counterbalancers, and the three-valve combustion chambers contribute to sufficient horsepower for 14.3-second quarter-miles. And the engine is more than just a performer; it's rugged as well. There are racers who have ridden their Hawks in as many as 32 box stock roadraces without once pulling the heads off their engines.

Neither is any real maintenance needed for the solid-state pointless ignition or the smooth-operating 32mm Keihin carbs with their accelerator pump. Even the six-speed close-ratio transmission whips through the gears faultlessly, so smoothly, in fact, that you sometimes question whether you've used your left toe at all. The only problem our silver 1981 test bike had was a little more of a cold-blooded nature than the '80 model. Honda has assured us that carburetion is unchanged from last year so perhaps the early-morning laziness was just an idiosyncracy of this particular engine.

And while the motor is working almost faultlessly, so, too, is the chassis: The Hawk is among the best handlers on the street. Whether speeds are high or low the Hawk can turn any corner into a straightaway if you have even the slightest inkling about apexes and cambers. The Hawk's agility is even improved over the '80 model with a new air-assisted fork and Variable Hydraulic Damping (VHD) shocks. Spring and damper rates inside the VHD shocks are about the same as last year's units, but Honda feels that better quality control in the new shock improves performance. The fork also provides a more progressive action and can be more precisely tuned for each rider. The Hawk still steers with the quickness and predictability it's always been known for, so when you touch the footpeg nubs to tarmac, you don't notice any wiggles or handling aberrations; just the same sure ride with no surprises.

But while the engine and handling are largely unchanged from last year, the Hawk's styling isn't. The new cosmetics emigrated from Europe, where they've been used for several years on the CB400N version of the Hawk. The Euro-facelift for U.S. consumption includes a larger tail section, matte-black fork legs, plastic color-matched front fender and reversed ComStar wheels. Another alteration appears at the instrument cluster, which now features Honda's back-illuminated face that makes the numbers easier to read at night.



PHOTOGRAPHY © 1981 VIC HUBER

To become small-bore champ, this year's Hawk had to top the best

. . . last year's Hawk.

HONDA CB400 HAWK

Importer: American Honda Motor Company
100 West Alondra Boulevard
Gardena, California 90247

Category	street
Suggested retail price:	$1898
Engine type	four-stroke vertical twin
Valve arrangement	single overhead camshaft, three valves per cylinder
Bore and stroke	70.5mm x 50.6mm
Displacement	395.0cc
Carburetion	two 30mm Keihin constant-vacuum
Gearbox	6-speed
Front fork / wheel travel	air-spring, 32mm stanchion tube diameter / 5.3 in. (133mm)
Rear shocks / wheel travel	5-way adjustable spring preload / 4.3 in. (110mm)
Wheelbase	54.5 to 55.5 in. (1384 to 1410mm)
Seat height	31.0 in. (787mm)
Weight	397 lbs. (172kg)
Fuel consumption	52 to 61 mpg (22 to 26 km/l)
Warranty	6 months / 6000 miles
Available colors	black and silver

The new Hawk also has a 5mm-lower seat that is just as firm as all Hawk seats—which is to say that it's fine for sport riding but too hard for long-distance stints. But the Hawk never has been the best small-sized tourer or arguably the fastest or best-looking bike in town. It has always been close to the top of the list, but in 1981 the only area where the Hawk tops everything in its class is braking. The new twin-piston caliper stops the Hawk quicker and more predictably than any of its competition.

But when you add the winning score for brakes with consistently high marks for performance, handling and looks, the Hawk comes out as an overall sub-500cc sportbike winner. You can't buy a better all-around little sportbike, unless, of course, you don't like black or silver paint. —*Dain Gingerelli*

Yamaha XV920R

"A skittish motor-bike with a touch of blood in it is better than all the riding animals on earth." —*Lt. Col. T.E. Lawrence*

BY STEVE THOMPSON

The big news on May 19, 1935 in England was the crash of Lt. Col. T.E. Lawrence, who jammed himself and his motorcycle through a hedge trying to avoid traffic. But as newsworthy as Lawrence of Arabia's death was, no less so was the bike he was riding. In the mid-Thirties, the Brough Superior was very hot stuff indeed, touted by George Brough as "The Rolls-Royce of Motor-Cycles," and evidently thought so by a small but highly visible and socially impressive list of owners. And centerpiece of the Brufsup SS100 was an engine that even in 1935 had become as familiar to motorcyclists as gravel rash: a big-inch vee-twin.

A lot has changed since Lawrence high-sided into history, but motorcycling's love affair with the vee-twin has never really dimmed. The list of famous and enduring vees is recognizable to any motorcyclist from any era since the Thirties, comprising as it does names like Vincent, Harley-Davidson, Indian and Ducati.

To that list, of course, was added the 750cc Yamaha Virago this year. It was a much-heralded, much-applauded attempt by Yamaha to cash in on a rich vein of moto-lore while capitalizing on the company's own Special understanding. But now, to every 10 Viragos that sit on Yamaha showrooms has been added at least one of a different version of the same basic frame and engine. In Europe, its primary market, the bike displaces 980cc and is painted either red or silver. Here, because of a smaller bore-size, it is a 920, is available only in red and with a "more conservative" handlebar. Otherwise, the XV920R *is* a Yamaha TR1.

Yamaha officials say the TR1/920 is not simply a testing-of-the-Eurobike waters here, because, they say, they know that a market for Euro-concept machinery does exist—as CYCLE GUIDE pointed out in its exclusive test of the Euro-XJ650 (November 1980). The market is, they readily admit, a smallish one, made up of older, experienced riders who have enjoyed the zap of multicylindered life but are searching for a new kind of ride—a search that usually leads them to BMW or Ducati.

The benchmarks for the 920, therefore, are not bikes like the Kawasaki GPz1100 or Suzuki GS1100, but the BMW R100 or Ducati Darmah. This means that, to be successful, the 920 need not be a drag king, but must have an appetite for low-effort speed over long stretches of two-lane, must produce good fuel economy at those speeds and must possess grace under pressure.

Yamaha has chosen to meet these demands not by the usual European methods of building street bikes descended from racers which are then refined on the *autostrade*, but by the more usual Japanese method of design-for-the-job. Yamaha has already been successful with this approach with its Specials, the Maxim and Euro-XJ650 and, lately, the Virago.

The analysis must have convinced the engineers that a radically new vee-twin wasn't necessary, because the Virago/920/TR1 engine is derived directly from previous Yamaha single experience—which explains the resemblance between XT250 cylinder heads and the vee-twin's heads. However, any resemblance to the push-rod vees of the past is pure illusion, because despite its clean exterior, X-ray vision would show you that the 920's engine really is complicated indeed. Its single-overhead camshafts are driven by two separate sets of cam chains, each with a complex three-gear intermediate set and its own cush mechanism. It runs "backwards," according to Yamaha, to use the jackshaft required to transmit power from the right end of the gearbox to the left-side shaft and chain drives. If the motor ran "forward," the jackshaft would spin the final-drive devices in the wrong direction. And intake plumbing, in order to be kept away from a rider's legs, directs air through a duct below the steering head, through the box-section welded-steel frame to an airbox under the lefthand side cover. The two 40mm Hitachi CV carbs nestle in the 75-degree vee between the cylinders, which are offset 24mm—the width of a connecting rod's big end. And two separate oil pumps keep it all alive.

All the variants of this engine use the same stroke, varying displacement by bore size, and all have the same power characteristics. They pour out torque by the bushel, but peak power is modest—as you'd expect, given the valve areas, compression ratios and design rpm. Like the Virago, the 920 is happiest at low-to-middle rpm; it runs out of steam at about 6500 and the extra 500 rpm to redline aren't worth the effort. The 920 pulls like a tractor

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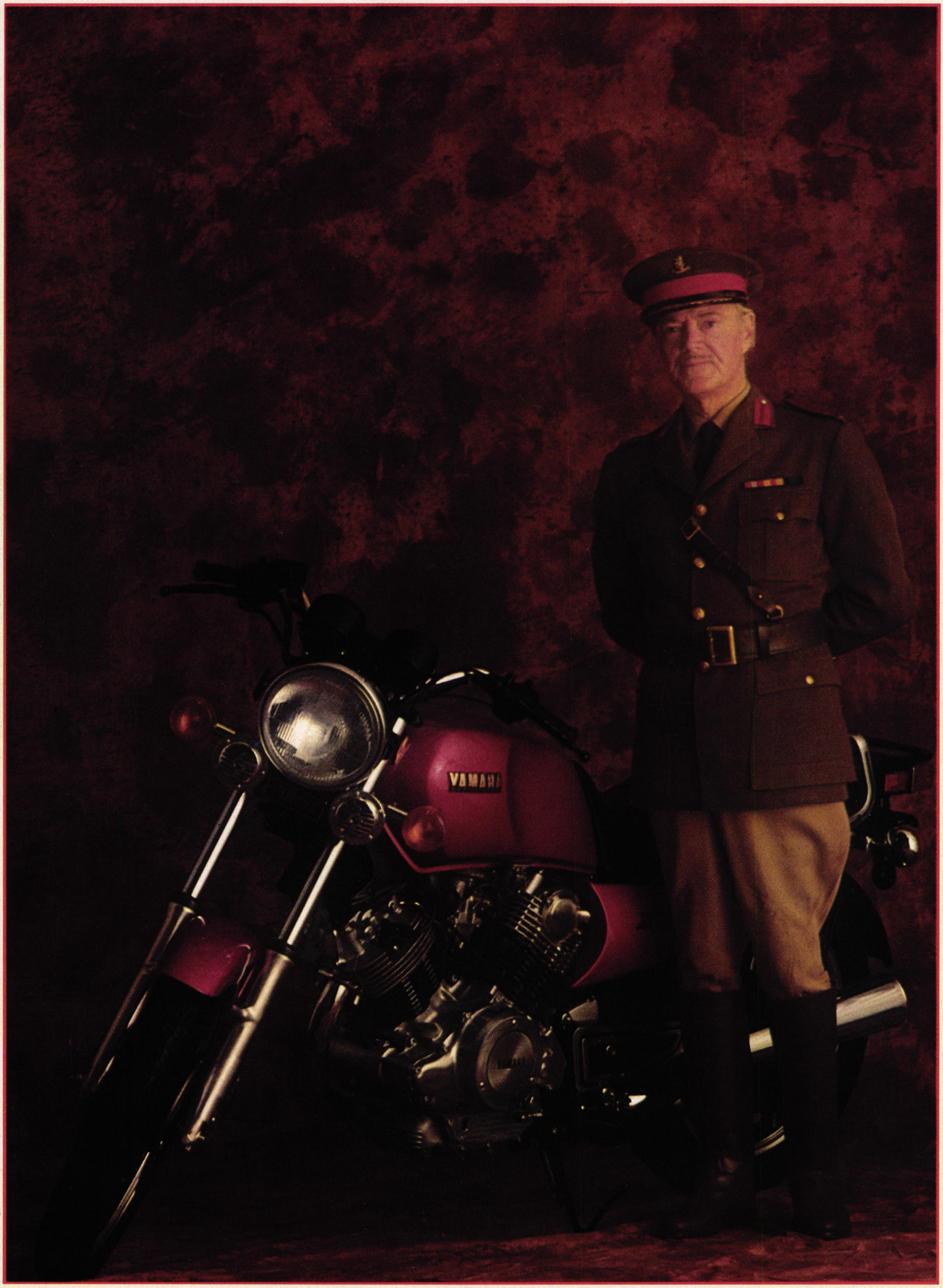
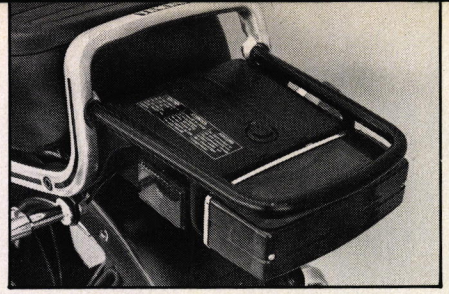


PHOTOGRAPHY © 1981 MICHAEL GOING

from 2000 and delivers a nice snap around 4000—just the sort of powerband for easy, low-effort riding.

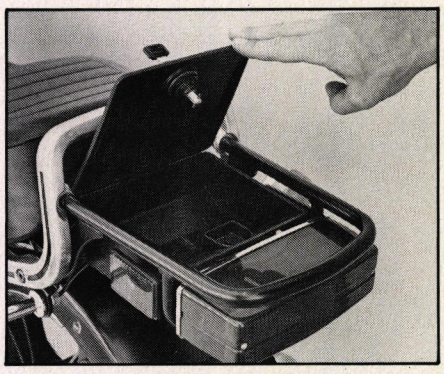
Some of the Virago's complexity has been avoided in the 920 with the elimination of shaft drive. In its place, Yamaha has used an all-too-rare alternative—the fully enclosed chain. Packed in a liter of lithium grease, the 630 chain should be good for 30,000 miles under optimum conditions, according to Yamaha. Its main advantage, however, in the 920 mission-profile, is its unsprung-weight loss.

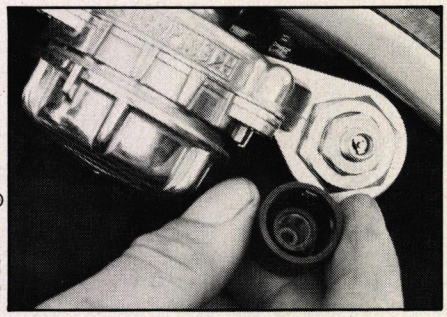
In the appetite-for-speed department, therefore, the 920's drivetrain shows little unusual. The five-speed gearbox, electric starter and transistorized ignition would have competed for front-page news with Lawrence in 1935, but today it's all SOP. Similarly, despite the hoopla, the Monoshock suspension is, while interesting, hardly revolutionary, since its predecessors have armed many a YZ motocrosser. Its main advantage on the 920 is its full adjustability; like the Virago, it employs a five-notch damping adjuster knob under the right rear seat rail, operating a cable that alters internal damping in the nitrogen-filled De Carbon monoshock. Next to the knob is the air valve for shock preload, and the front fork uses air for preload, too. H-rated tubeless tires, double discs in front and a drum brake in back, and the swoopy curved-spoke "Italic" alloy wheels first seen here on the Maxim 650 complete the chassis.



A convenient rack to mount light luggage

But very little room in the trunk.





Accessible adjustment of the Monoshock

Damping and preload are right at hand.

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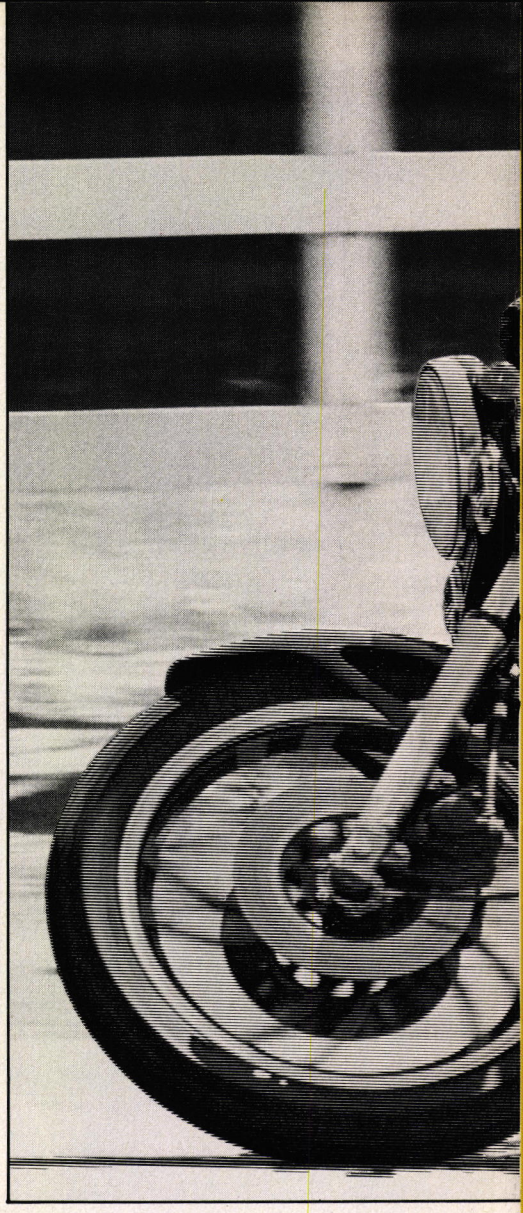
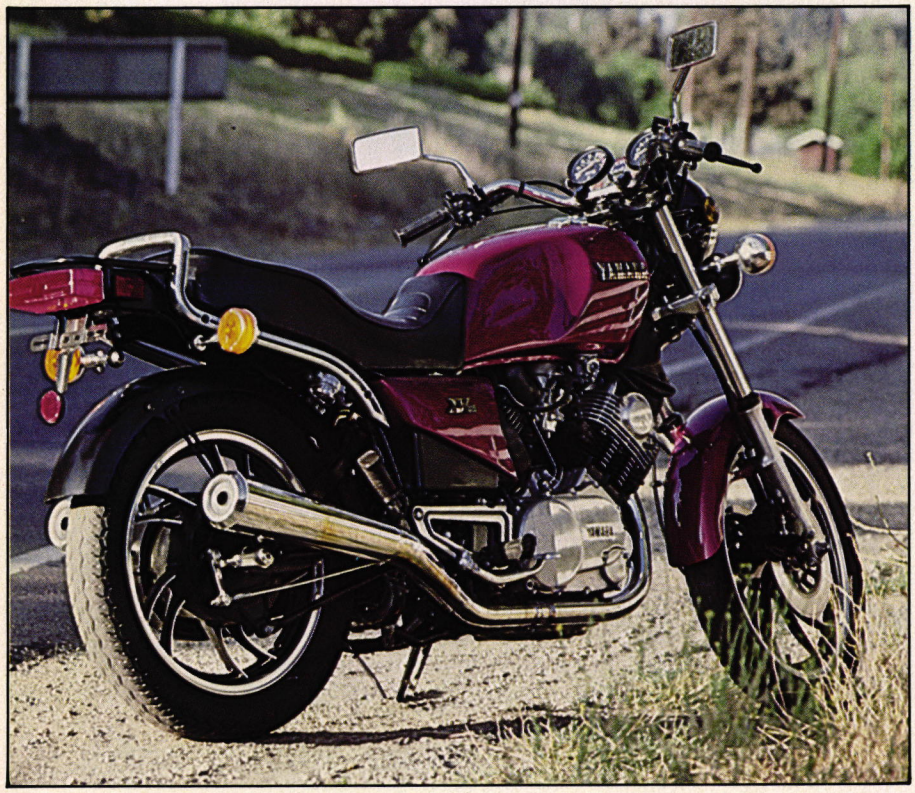
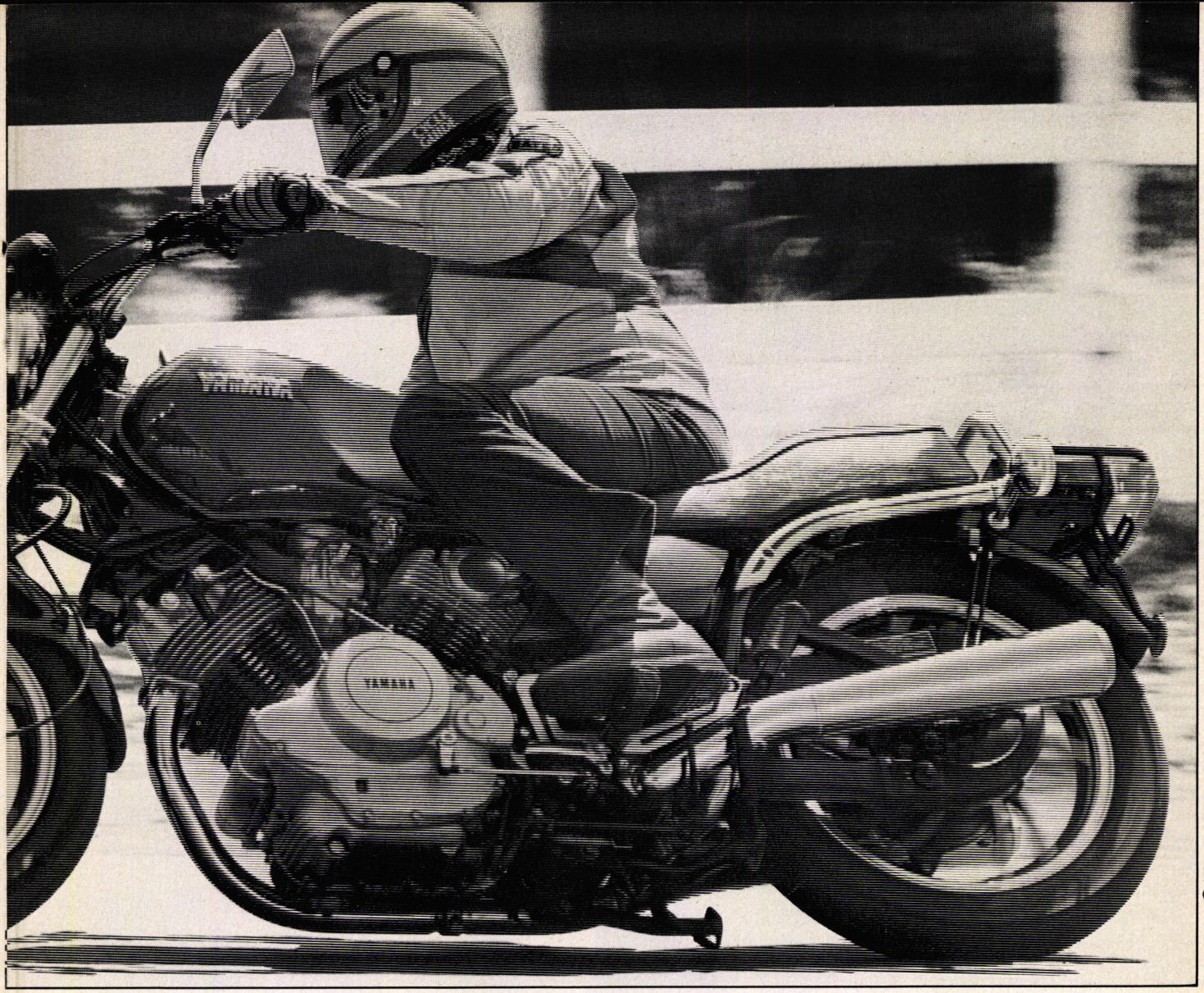




But as mechanically unremarkable as the drivetrain and chassis are on the 920, the styling is quite another story. The massive quartz-halogen headlight leads the 5.2-gallon gas tank and flared-up seat just as the XJ650's did, to produce much the same visually front-heavy effect. However, Yamaha USA officials say that the Virago-jaded eyes of America seem to think the effect unpleasant—because, they say, of the unbalanced masses of the engine/gas tank and the rear end. Sans external shock absorbers or fat rear tire, the relationship is exactly backwards to most Yankee tastes, at least according to Yamaha. Furthermore, the use of a fender that is attached not to the rear subframe but to the swingarm creates visual disorientation in some folks, as does the small black rack that encircles the taillight and security-chain stowage box. Regardless of the esthetic effect of this combination, the human-factors result is just what the sport-touring doctor ordered. With its slightly rearset pegs, tall tank and long



PHOTOGRAPHY © 1981 HELIOTROPE PHOTOS

seat, the bike gives riders up to six feet a comfortable, "in-rather-than-on" feeling. For taller riders, though, the American handlebar produces a too-upright riding position, putting too much weight on the buttocks and inner thighs, and making it seem as though there isn't enough distance between footpegs and seat, a problem made worse by seat padding insufficient for long trips.

Sitting still in a driveway, the 920 seems only mildly promising as a contender in the European sport-touring stakes. It feels heavy as you slide onto the low seat, and quite long. This isn't helped by the sidestand, which keeps the bike a little too upright, and therefore a little teetery. But once you swing the stand up (and to engage first gear with the engine running you *must*, thanks to the starter lock-out linkage), open the handlebar-mounted starting-circuit lever and punch the starter button, things get livelier.

Vee-twins make wonderful sounds, and the 920 is no exception. It fires up with a throaty rattle and thunks away with little hesitancy to take throttle after 30 seconds on the cold-start circuit. Because of the long exhaust pipes, its note is more BMW-like than Harley-like. The opposite, though, applies to the way it works as you ease it from driveway into traffic—and that's a compliment. Minus the Beemer's rocking-couple vibes trying to twist the Yamaha onto its side, the 920 can be ridden like a trials bike in traffic, which is to say, almost effortlessly at very low speeds. Its stability is wonderfully calming in go-to-work traffic.

But this bike is supposed to go to work at higher speeds, out where the Interstate offramp opens up the world of the sport-tour. On the way there, with its Monoshock damping set on the second-softest adjustment, the preload up front at 10 psi, rear at 25, the bike handles the rain grooves, expansion joints and Botts dots with a ride somewhere in the middle of the firm-but-okay zone. A hint of rear-end harshness, however, makes you uncomfortable about encountering any washboards on the fast sweepers up the road.

Once there, the 920 provides some surprises, all good. The bike pumps out a smooth flow of power from 2000 to 5000 rpm, making deep downshifting superfluous. It bends into corners under braking with little effort, and, once in deep, provides good cornering clearance. In fast or slow turns, smooth or bumpy, the 920 slowly demonstrates that it is a stable, predictable bike. Its pressed-steel-backbone frame does not provide the taut feel of a CB750F or a Ducati Darmah, but the 920 works well at anything short of its absolute limits. And gradually, you discover that those limits are quite impressive—well before you're chewing up the righthand footpeg or dragging the leftside stand projections, you are into pedigreed sport-touring territory. The Bridgestone tires hold predictably on dry pavement, the recommended suspension settings allow plenty of suspension movement without teeth-jarring jolts on bad surfaces, and gradually

Continued

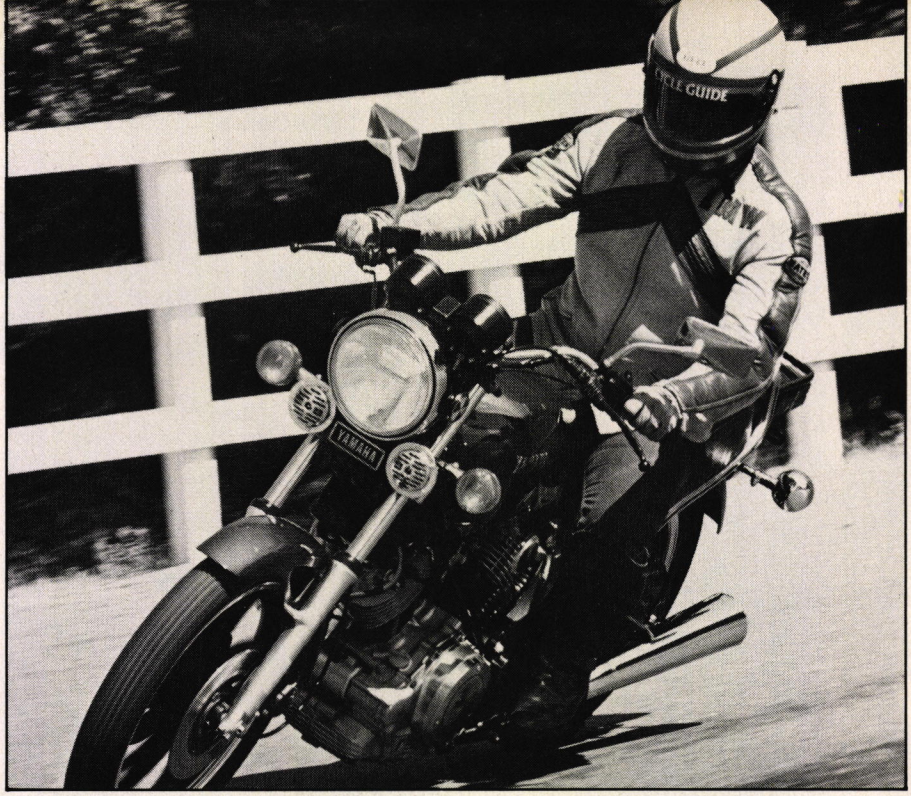
the bike attains a flowing, relaxed feel.

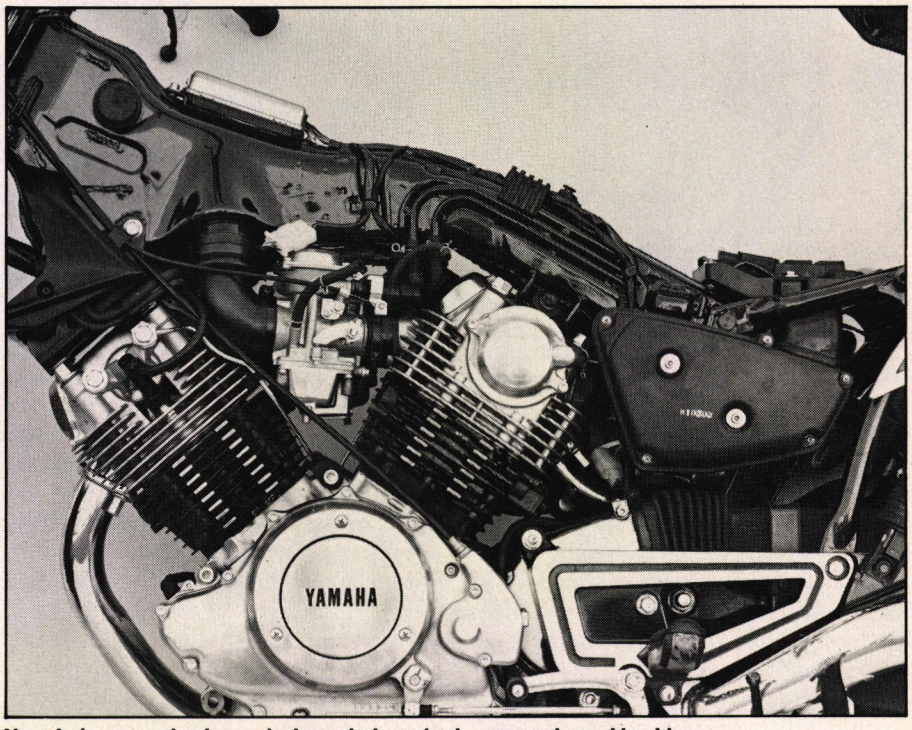
It is not a roadracer. It has much less ground clearance than the XJ650, and the sedate manner of its power delivery and the amount of power to be had encourage quite another style—again, BMW-like is the proper reference, not only for its power, but for its level of vibration (the mirrors go into terminal blur above 5000 rpm) and even for its fuel economy. A day of sport-touring netted 47 mpg.

In ruthlessly operational terms, the XV920 is not a superlative machine. Its systems, from engine to suspension, work well but not brilliantly. It is not the fastest, not the best-handling, not the plushest motorcycle you can buy. And yet it is very, very important.

This is because, although it is not a better BMW or Ducati, in one sense it has no rivals. That sense is its lineage; it is the first melding of traditional Japanese excellence in workmanship, fit and finish—with all the resultant benefits they imply—with this particularly European/American configuration. At $3700, while not cheap, it is far more affordable than its European predecessors. And while it has detail flaws that typify new bikes in general and Japanese bikes in particular (its weight, a toolbox too difficult to remove and replace, an awkward release mechanism for the rear-hinged flip-up seat), as a first attempt, it has come close to being a bullseye.

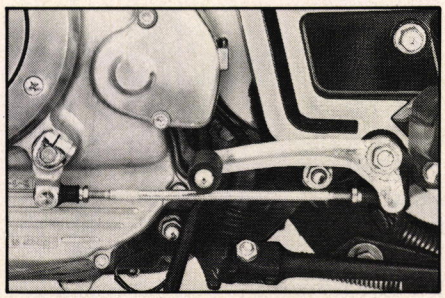
Only refinement from real-world input will polish the 920's sport-touring capacity, but it can't be stated strongly enough that in one area, the bike needs no development at all. That's the area between the driveway and first turn on Fast Road—the area, in other words, where most of our riding is done. There, the superb low-speed steering and low control efforts combine with its instantly available torque to provide the rider with as close to a zero-effort urban/suburban bike as can be bought. The fact that the same machine is capable of high-speed performance so close to the very best from Europe gives it an appeal that Col. Lawrence and his peers would certainly have understood, since the Brough Superior SS100 gained its reputation not because it was the fastest of the day, but because its rider could be assured of a superb degree of workmanship, attention to detail and a splendid ride, slow or fast. For Yamaha to have de-fanged the big-inch vee-twin of the worst of its bad habits and mated it with such a stylish, competent chassis and suspension is no small feat, one that should not only make it front-page news in vee-land, but also exactly the bike the sport-tourers of America have been asking for. •





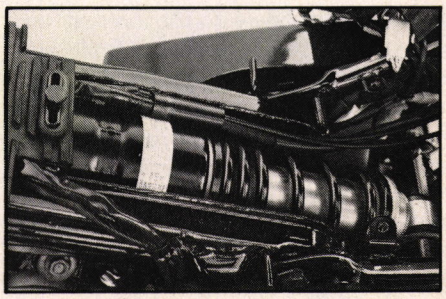
Yamaha's vee-twin chugs air through ducts in the pressed-steel backbone

Relocation of some parts helps to keep the XV's overall length down.



Swivels and joints for rearset controls

A long link with a Euro-riding style.



Monolithic shock in pressed-steel frame

Removing road thump from the thumper.

Vee-Twins: When It Comes To Angles, What's Right Is Right

• When the New Safety bicycle supplanted the Old Ordinary high-wheeler late in the nineteenth century, the vee-twin engine was already in existence. Elegant specimens had been installed in steamboats since 1852, and one of the first of Gottlieb Daimler's experimental high-speed engines was a vee-twin. So by the time the motorcycle had begun to evolve out of the bicycle, the vee-twin concept was already available to those who wanted more than one cylinder for the engine.

At that point, though, the vee was wanted not for its power but for its smoothness; it might be no bigger in displacement than the single-cylinder engine it replaced, but it vibrated less and was easier to turn over to get it started. That mattered more than most things, for there were no clutches then, just a belt running over pulleys fixed to the nose of the crankshaft and to the back wheel. If a rider wished to halt, however briefly, he had to stop the engine; to start, he had to push.

So it was logical, given that simplistic drivetrain, for the crankshaft to lie across the frame, parallel to the rear-axle spindle. By 1901, when the New Werner laid the pattern for the century, it was seen as natural for the crankcase of the engine to be where the pedals of the pushbike had been. And when a twin-cylinder engine was demanded in place of a single, it was equally natural to fit the vee-twin in that same way into the so-called "diamond" frame of the New Safety bicycle.

That pattern has endured to this day: The vestiges of the diamond frame are still to be seen—stiffened here, articulated there, altered in proportions but scarcely in principles—in most of today's motorcycles. We've developed clutches, gearboxes, chains, shafts and all manner of driveline sophistications that didn't exist in that day and age, but we still think of the motorcycle in terms of a layout that is as old as the century, and the vee-twin fits into the pattern as naturally now as then.

So Honda and Guzzi saw fit to set the cylinders *across* their frames rather than in tandem? So did other Japanese, other Italians and, earlier still, sundry Englishmen before them. If it be a little and low-powered engine it will do no harm, and it might even protect the rider's knees; if it be big and powerful, transverse torque reactions will, as in all longitudinal-crank musclebikes, be bothersome—except, of course, when countered such as with Honda's ingenious contrarotating mass (the clutch in the CX500 vee-twin, the alternator rotor in the flat-four Gold Wing).

Gyroscopic precessions can be countered in the same way. But if, as is the general rule, they are not, then they will affect the bike in some way no matter how the crankshaft is installed. In the tandem-vee, as in all transverse-crank engines, the spinning mass of the crankshaft and its weights, together with any flywheel attached, rotates in the same plane and sense as the wheels—meaning that any attempt to bank the bike to the left will encourage it to turn left, which is all to the good. With the crank mass spinning in the longitudinal plane, a change in pitch (nosedive when braking, for instance) tends to disturb the bike directionally.

So far, then, everything looks favorable for a vee-twin with its crankshaft athwartships. That's despite the fact that the rear cylinder can be masked by the front one to the detriment of its air cooling, which is why Ducati and others have set the front cylinder almost horizontal. Still, the frontal area of a vee-twin can be as slight as that of a single, bar the inch or two of offset necessary to accommodate two connecting rods side-by-side on a common crankpin. Moreover, the weight of the engine can be carried very low without adverse effects on the cornering clearance; so if the opportunity is taken to lower the rider as well, the whole lot can bank from side to side with ease and speed.

Then there's the matter of vibration, the absence of which is a by-product of the included angle between the cylinders. And it is not for nothing that we call an angle of 90 degrees a "right angle." Because for a vee-twin, 90 degrees works far better than any narrower arrangement, though there have been legions of vees with angles ranging from 80 down to 26 degrees. The beauty of the 90-degree vee is that it leaves no primary forces unbalanced: As the No. 1 piston reaches Top Dead Center and stops momentarily, No. 2 is at midstroke and moving at its fastest. No. 1 is completely balanced by the centrifugal force set up by the crank's counterweights, and No. 2 has only the secondary force acting on it. Every 90 degrees of crank rotation sets up a similar situation. And better still, the vertical components of the secondary force always cancel each other, so all that remains is a resultant from the horizontal components, a shake in the plane of the cylinders and perpendicular to the bisector of their included angle. The shake alternates in direction four times per revolution, but its maximum value is less than half that of the maximum primary force that has been so neatly eliminated.

The snag is an uneven exhaust beat, audible evidence of unequal firing intervals. On a 90-degree vee-twin there are two power strokes separated by an interval of 270 degrees, followed by a 450-degree wait for the next one.

Obviously, the firing intervals become more evenly spaced as the vee angle is decreased from 90 degrees toward 0 degrees, a layout which would constitute a parallel twin. But the further the angle gets from 90 degrees, the less self-canceling are the effects of engine imbalances, resulting in more vibration to contend with.

The effects also are negative when the vee is opened wider than 90 degrees, except that a vee-twin engine is perhaps its absolute smoothest when the included angle is a full 180 degrees—a flat twin, if you will—because it offers even firing intervals in addition to perfect primary *and* secondary balance.

Invariably, however, the included angle selected for any tandem vee depends largely upon two factors seemingly unrelated to engine design: the ideal wheelbase of the chassis and the desired appearance of the entire motorcycle. A vee of 90 degrees tends to produce an extremely long and not particularly gracious-looking motorcycle by popular standards, no matter how the cylinders are positioned. That's why so many designers have chosen narrower included angles, knowingly sacrificing some inherent right-angle smoothness to achieve the proper look and length. Yamaha's XV series vee-twins are perfect examples, and it is only through extensive computer studies into vibration control that the designers were able to produce a 75-degree vee-twin that is smoother than most 90-degree engines.

Thus the vee-twin engine cannot be dismissed; as we have seen, there are too many ways in which it so well suits the concept of a motorcycle. It has changed with the passing years, as everything must; engineering has made its own long-legged strides, and today's off-beat ambler sounds less like a galloping horse and more like a pair of Oerlikon cannon running amok. It may not have as many cylinders as other motors, but it may well have more valves; it may yield no more power but may well be more frugal; and although it may have less incorporate behind it, it may yet have a longer future before it.

—L.J.K. Setright

Continued

Ride Review

• After 1500 miles in the saddle of the XV920, I guess that its flaws could have soured me. But they haven't. Despite the too-hard seat, despite the too-long stand that eventually put the bike on its side and even despite its unconventional style, I still pick the XV more frequently than any other bike in the garage. For years I've been listening to Paul Dean tell me how the GS1100 feels as if it were built just for him, and now, with the XV920, I finally know what he means. The bike fits; it's really that simple.

So what if it won't stay with a well-tuned 550 in a straight line? The absolute lunge that rewards me when I grab a handful of throttle lets me ride with any bike in the twisties. All without hanging off. I just sit there in control and go like blazes. The XV920 is an adult-rated motorcycle, and I'm happy to say that I've finally grown up. *—Larry Works*

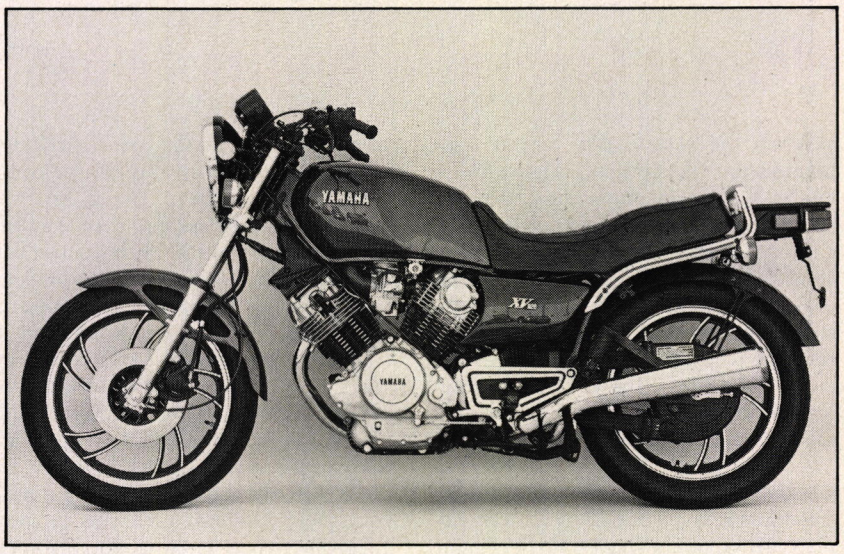
• One experience, happily, convinced me that the XV920 was more special than Special: splitting freeway lanes. On big, cammy, inline Fours that activity is at best a cautious one during my 60-mile daily commute. Top-heavy bikes with CV carbs don't cotton to trials-ing traffic jams, but my first shot at a constipated four-laner on the XV had it sashaying between vehicles like a filly at a barrel race. With its rheostat throttle and dead-steady slow-speed manners, my only worry was a jerk in a Mustang three cars ahead who wanted to muscle over.

And one experience, sadly, convinced me that the XV920 isn't perfect—yet: At the 30-mile mark I had numbutt. In a word, the seat *isn't*. Calling it too little padding in most of the wrong places is being kind. Rework the saddle and the XV's a thoroughbred. *—Jeff Burtt*

• Take away the thumpety-thump of the exhaust and the mile-wide torque curve and I would hate the XV920. I'd hate the looks—at least the rear end, anyway—and I'd not be crazy about the seat comfort, as well. And for a supposedly narrow vee-twin, the XV's bulging side panels would make me mad. The pressed-steel chassis would not make me happy either, because of its flexy nature in fast turns. It would even drive me crazy to hear the rumbling and clanking starter fire the motor into life every day. It would all be unbearable if it were not for that exhaust note and the flat plateau of torque.

But once the motor is chugging, all the problems seem to melt away. The XV is transformed into a pleasant means of transport, something I would not mind owning—until I switched off the thumping motor. *—David Dewhurst*

Yamaha XV920RH



SPECIFICATIONS:

IMPORTER: Yamaha Motor Corporation USA
6555 Katella Avenue
Cypress, California 90630

CATEGORY: street

SUGGESTED RETAIL PRICE: $3499

ENGINE

Type	four-stroke tandem vee-twin
Valve arrangement	single overhead camshafts
Bore and stroke	92.0mm x 69.0mm
Displacement	917.4cc
Compression ratio	8.3:1
Carburetion	two 40mm Hitachi constant-vacuum
Air filter	disposable paper element
Lubrication	wet sump
Starting system	electric only
Ignition	battery, transistorized breakerless, twin coils
Charging system	12-volt; alternator, voltage regulator, rectifier

DRIVETRAIN

Primary drive	straight-cut gears; 1.660:1 ratio
Clutch	wet, multi-plate
Transmission-to jackshaft	straight-cut gears; 1.447:1 ratio
Final drive	#630 chain (3/4-in. pitch, 3/8-in. width); 2.188:1 (16/35) ratio

Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.352	12.361	6.1
II	1.666	8.756	8.6
III	1.285	6.753	11.1
IV	1.073	5.639	13.4
V	0.909	4.777	15.8

SUSPENSION/WHEEL TRAVEL

Front	air-spring, 35mm stanchion tube diameter /5.8 in. (147mm)
Rear	Monoshock air-spring, six-way adjustable rebound damping/4.8 in. (122mm)

BRAKES

Front	dual single-action hydraulic calipers, 10.5-in. (268mm) discs
Rear	drum, single-leading shoe, rod-operated

TIRES

Front	3.25H19 Bridgestone Mag Mopus L303
Rear	120/90-18 65H Bridgestone Mag Mopus S716

DIMENSIONS AND CAPACITIES

Weight	509 lbs. (231kg)
Weight distribution	53.8% front, 46.2% rear
Gross vehicle weight rating (GVWR)	1005 lbs. (456kg)
Wheelbase	60.5 to 61.3 in. (1537 to 1557mm)
Seat height	30.0 in. (762mm)
Handlebar width	29.3 in. (745mm)
Footpeg height	12.6 in. (320mm)
Ground clearance	5.5 in. (140mm), at centerstand
Steering head angle	28.5 degrees from vertical
Front wheel trail	5.0 in. (126mm)
Frame	pressed steel backbone
Oil capacity	3.8 qt. (3.6/)
Fuel tank	steel, 5.0 gal. (19.0/), including 0.8 gal. (3.0/) reserve
Instrumentation	speedometer, odometer, tripmeter resettable to zero, tachometer

PERFORMANCE

Fuel consumption	39 to 48 mpg (16 to 20 km//)
Range, maximum	197 to 244 miles (317 to 393km)
Range, reserve only	31 to 39 miles (51 to 63km)
Speedometer error, 30 mph indicated	30 mph actual
Speedometer error, 55 mph indicated	53 mph actual
Best ¼-mile acceleration	13.338 sec., 99.41 mph (160 kph)
Top speed (calculated)	111 mph (179 kph)
Stopping distance from 30 mph	36 ft. (11m)
Stopping distance from 60 mph	146 ft. (45m)

WARRANTY: 6 months

AVAILABLE COLOR: Brilliant Red

All weights and measurements are taken with machine unladen and fuel tank empty

COMPARATIVE TEST DATA:

Make & Model	Quarter-Mile, sec/mph	Top Speed, mph	Weight, lbs	Stopping Distance From 60 mph, ft.
Yamaha XV920RH	13.34/99.41	111	509	146
Yamaha XV750H Virago	13.28/99.8	105	481	132
Suzuki GS1000G	12.34/110.8	139	564	141
Honda CB900F	12.21/111.1	141	547	130
BMW R100RS	13.48/98.4	127	492	145
Harley-Davidson Tour Glide	15.58/83.9	108	785	223

MINITEST:

Suzuki PE250X

Deep in the forest a legend stirred.

• Suzuki's PE250 has become something of an enduro legend during its five short years in the woods. It gained instant recognition because back in 1977 it was the first serious enduro bike to come from Japan. And in a market dominated by low-volume European firms, the mass-produced PE took on an almost overwhelming presence. But the legend was firmly established when the PE started challenging the European kings for *results* as well as showroom sales.

Results show that the PE250 was an almost instant success. Utilizing one-year-old motocross technology was always good enough to keep the PE ahead of the tree-dodging crowd. Not wanting to fool with a sound idea, Suzuki has stuck to its original format, reshaping last year's motocross machine into this year's woods racer.

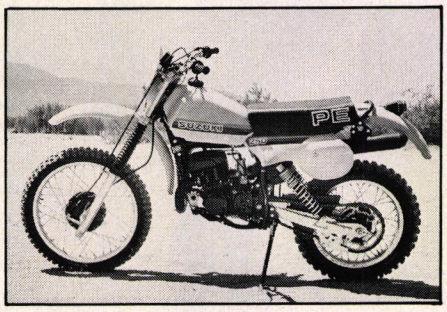
The X-model PE250 is no exception to the evolutionary rule. Indeed, for 1981 the PE250 has probably changed less than at any time in its short history. But, as Suzuki well knows, when you have the right formula you don't mess around with it.

Suzuki engineers didn't fiddle with the PE's motor at all. It retains the 67mm x 70mm dimensions of last year, and while the new RM motocrosser has an all-reed induction, the PE retains Suzuki's patented Case Reed Induction. Only external changes differentiate the old and new PE250 motors. Last year's airbox now has a top cover from an RS model which makes the PE quieter than before but also restricts airflow. This accounts for a leaner mainjet and the loss of a little top-end performance.

The PE motor still feels more like the motocrosser from which it was developed rather than an enduro engine. It is a revver, with little bottom-end and, because of the new airbox cover, less high-rpm power than before. Combine an elevated powerband with a light flywheel and you get an explosive enduro motor that does not take kindly to slow riding in tight woods. The motor does not have the low-speed snap to get you out of trouble without resorting to the clutch. But as the results show, a lot of riders have learned to adapt to the widely spaced gears, a light clutch and a buzzy motor. It's not difficult to master the technique, but even when you are proficient, the PE still demands concentration.

Only on open trails and fire roads does the PE250 feel totally at home. Perhaps it is the motocross lineage showing through, but when the track ahead is fast the PE shifts into automatic. The motor accelerates hard out of turns and the unaltered chassis keeps things controlled down the straights. Steering is a little on the slow side, but it works well enough between the trees. The suspension is compliant, absorbing everything from high-speed holes to deep-woods logs. You can outstretch the suspension if you try hard, but in almost every case the PE shocks and fork are well up to the task.

Indeed, the whole motorcycle is up to the enduro task, and the results prove it. The PE has been one of the most popular enduro bikes in history, and because it is little changed and still competitive for 1981 there is no reason why the PE250 will not continue as a deep-woods legend. —*David Dewhurst*



SUZUKI PE250X

Importer: US Suzuki Motor Corporation
3251 East Imperial Highway
Brea, California 92621

Category	enduro
Suggested retail price:	$1899
Engine type	two-stroke vertical single
Port arrangement	one reed-valve-controlled intake, one piston-controlled intake, six transfers, one exhaust
Bore and stroke	67.0mm x 70.0mm
Displacement	246.8cc
Compression ratio (corrected)	7.7:1
Carburetion	36mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	air-spring, 36mm stanchion tube diameter/9.3 in. (236mm)
Rear shocks/wheel travel	10.9 in. (277mm)
Wheelbase	56.3 to 57.0 in. (1430 to 1448mm)
Seat height	37.0 in. (940mm)
Weight	241 lbs. (109kg)
Warranty	none
Available color	yellow

PHOTOGRAPHY © 1981 DAVID DEWHURST

Suzuki's latest PE250 is still a serious bike for the deep-woods racer

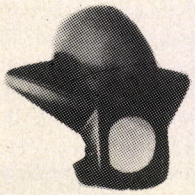
It's so much fun to ride that it could never dampen your spirits.

CHAPARRAL DISCOUNT CYCLE SUPPLY

WINDJAMMER IV

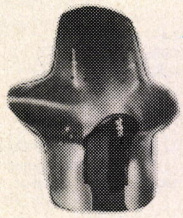
Black or Silver
$329.99

* Includes mount brackets and hardware, windshield, tonneau covers, adj. light. All merchandise is first quality.



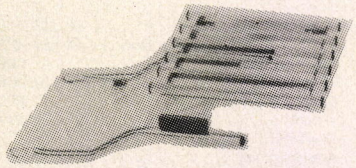
This "QT" fairing is molded from ABS plastic and available in black or white. Comes with smoke shield and universal mounts to fit all popular motorcycles.

$69.95



Deluxe Fairing Style Windshield with added leg protection from the wind. Universal mounts to fit most model motorcycles. Available in clear or smoke. 3/16" thick. Round or square headlight styles.

$69.95 Clear **$74.95** Smoke



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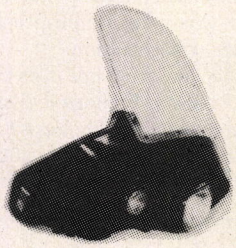
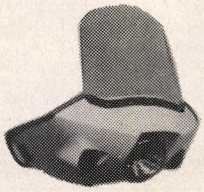
Black, white or silver. Inc. hardware, mask, std. windshield, headlight, warranty. All hardware is included. **Options:** Quartz light **$39.95** +5cm or -10cm shield **add $5.** Wing tips **$19.95.**



"Windsor" full size custom fit frame mount fairing. Manufactured from polyethylene available in black or white. Tonneau covers with locks to protect each storage compartment. Dash for radio or gauges. Price includes mounts.

$189.95



"Traveler" full size frame mount fairing. Fiberglass construction. Comes complete with windshield and mount. Dash for radio, speaker, gauges. Black or white or easily painted to match your motorcycle.

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TRAVEL TRUNK

Styled in black or white. Trunk has hinge and locking keyed lock. 18"x18"x14"
Striping not available

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Standard - no accessories	$34.95
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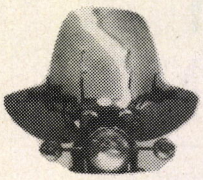

Fairing Style Windshield with universal mounts to fit most major model motorcycles. Available in clear or smoke. Provides protection from the cold winter winds. 3/16" thick.

$39.95 Clear **$44.95** Smoke

Cafe Fairing with style. Comes in white or black with smoke or clear shield. Made from ABS plastic and universal mounts to fit all popular motorcycles. 7" headlight hole.

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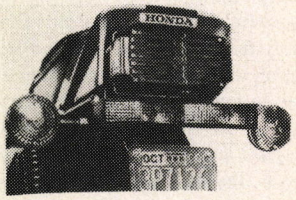

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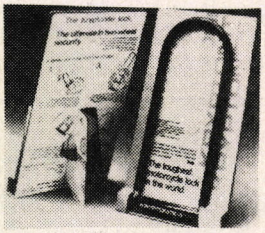
Safety brake flasher helps avoid getting rear-ended. Easy installation. In red or amber.

$104.95



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Cycle Guide's True Tales of Race Courses, Dark Horses and Machines at Speed

EDITED BY JEFF BURTT

No Doubt About It

Mark Barnett wins the 1981 Supercross naturally.

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• One move did it. One move defined the 1981 Supercross series, earned the championship for Mark Barnett and distilled all 10 of the previous races into skirmishes, mere training exercises for as talented a stadium motocross field as the AMA could muster against the fiercest competitor to yet lay knobbies on a man-made racetrack. That the move came at the Superbowl—the granddaddy of 'em all, round 11 of the 12-event series—is irrelevant; that it was made against Chuck Sun barely important. What matters is that it came, and when it came it was with the suddenness of a lightning bolt, the finality of a thunderclap. And it matters most that every other rider in that championship-deciding race *knew* it would come. There was no doubt about it.

The die was cast on January 31 at Anaheim Stadium at the first Supercross round of the year. Suzuki teamsters Kent Howerton and Barnett dueled in the final there, with Howerton getting the edge—and the win—on the last lap. At Seattle's Kingdome two weeks later it was Darrell Shultz, on another Suzuki, who took both ends of a doubleheader, with Barnett earning a third and a second at the two-day affair. Not until round number four at Atlanta's Fulton County Stadium did Barnett assert himself with a holeshot and a first-lap lead that he built to a 20-second cushion at the checkered flag.

"You've got to ride aggressively in the stadiums," he said, "you have to charge everywhere, you can't rest. I go after stadium tracks like I hate 'em, and when I get out in front I want to beat the other guys bad enough so everybody knows who I am." They

Continued

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Bell is aggressive, could finish second in the series

But "Too Tall" won't repeat as champ in '81.

knew in Atlanta, and Barnett emerged from the victory celebration as the new leader in the Supercross standings.

It was a short-lived lead. The very next week at Daytona saw Darrell Shultz triumphant again, with Barnett a distant eighth following a first-lap crash. "Daytona is a depressing race—at least it is for me," said the disappointed 20-year-old. "It seems like I always get knocked down there, and the field's so big that you just can't pass everybody."

Barnett and his mechanic, Jeff Clark, assessed the series post-Daytona. He was second in the standings, but there was a four-way race for the title between Shultz, himself, Howerton and Yamaha's Mike Bell, the 1980 Supercross champion. His machine was strong—indeed, in the hands of Barnett, Shultz and Howerton it had yet to be beaten—and he was riding well. But he hadn't really broken through, hadn't dominated, hadn't, except for Atlanta, shown that *he* was the rider to beat. There were seven events left, plenty of time to jockey for position, but the remaining races were soon to be spread out over an eight-month span as the indoor tour moved to the outdoor Nationals where Barnett would defend his 125cc crown. Before his concentration was divided between two series, Barnett needed to establish himself in one.

"Jeff and I sat down after Daytona and looked at the schedule," said Barnett. "We figured that I had to win both ends of the Houston doubleheader in the middle of March. After those, we were going outdoors—so if I was ever going to build up a cushion, it had to be at Houston. There wasn't another stadium race for six weeks, and Houston was the halfway point. I didn't know if I was going to do it—I'd never won a double before—but that's what we figured had to be done."

Preparing for a Supercross is different than preparing for an outdoor National. The

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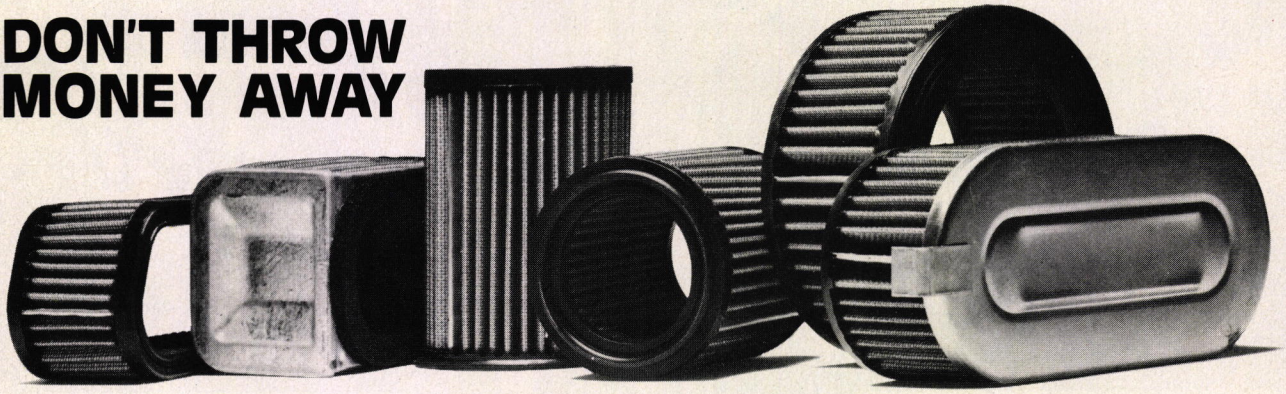

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Sun was set up in the sand

And shot down on the straight.

pace is greater indoors, where 20 laps averaging only one-minute-plus each provide furiously compressed action. Rider concentration is necessarily higher as turn follows turn, jump follows jump in rapid order, with too few straightaways and no real time to build a winning pace or develop an overall strategy. Opportunity is seized at the drop of the gate, and the winner is he who applies relentless pressure to himself and the racetrack, never relinquishing his grasp of the moment until the race is done.

En route from Daytona to Houston, Barnett stopped at his home, a 400-acre farm in Alabama that he shares with his grandmother. He has a practice track there, a two-mile layout shaped by the tractor he bought with bonus money earned from winning the 1979 Superbowl of Motocross. To prepare for Houston, Barnett fired up the tractor and created a small course from the larger one with plenty of sharp turns and stutter bumps.

"I try to run short laps as fast as I can go," he said. "I force myself to concentrate as hard in practice as I know I'll have to in the race. I build little jumps and stuff to help my coordination and anticipation. Then I have a trail I cut through some woods that I take flat out to build up my concentration.

"You see," Barnett said, "in the stadiums you can only think about each corner as it comes up. When I get to it, I think about gettin' through it as fast as I can and then I forget about it until the next lap because there's another turn coming up real quick. You try to hold it wide open on the straights and take the turns as they come. Outdoors you have time to think. Indoors it's not so easy. Stadium racing is the ragged edge, that's for sure."

The first race in Houston was, for Barnett, all of that. After chasing Broc Glover's Yamaha for 12 laps he came up close as both riders entered a short, whoop-filled straight. As they approached the first bump Barnett nailed the throttle and, feet off the pegs, sailed through the stutter section and into the lead. The surprised Glover never recovered, and Barnett's margin of victory at the end was 12 seconds.

"I try to pass when people least expect it," he explained. "You usually can't pass on the straights 'cause the bikes are so even in power. The tricky parts are where you make up time."

Brimming with confidence, Barnett went out the next night and won again, fulfilling the figuring that he and Clark had done. His total atop the leader board showed a 24-point bulge over second place, meaning he could DNF one of the remaining five Supercross rounds and still be within a stone's throw of recapturing the lead.

Of course, for as strong a rider as Barnett, that DNF was not to come. At Pontiac, Michigan's Silverdome twin-bill he was fourth the first night behind Bob Hannah—a welcome first win in almost two years for the former champ—and he won the second event. At Kansas City's Arrowhead Stadium, round number 10, Barnett took the lead before the first lap was complete and was never headed. As the field turned toward Los Angeles and the Coliseum Superbowl, his points lead was almost insurmountable. The only rider who could mathematically catch him was Howerton, and he was 40 points in arrears.

"I sure had a roll going," Barnett admitted. "Everybody was saying 'You got the title wrapped up.' But that idea wasn't in my head. You think of everything before a race. Somebody rammin' you, fallin' off—it isn't easy out there."

His protestations notwithstanding, Barnett's task at the Superbowl surely seemed easy. With no qualifying points, he would have to finish fifth or better in Los Angeles to win the title. If he won his qualifier—which pays three points—he needed to finish seventh. Pitside scuttlebutt before the racing began had Barnett taking it easy, maybe not even placing, staying healthy and pointing for the last race at San Diego in mid-November.

Barnett won his qualifier. Not only that, he set the fastest qualifying pace—with consistent one-minute 12-second laps—which earned him a slot on the pole.

As the field lined up for the final, Barnett was thinking the same thought he always does. "I look at races like I never won a race before. I *have* to get that win. I've worked too hard not to get it. When you start restin', you lose. When you lose, you stop makin' money. When you stop makin' money, it's time to quit. I'm not *even* ready to quit."

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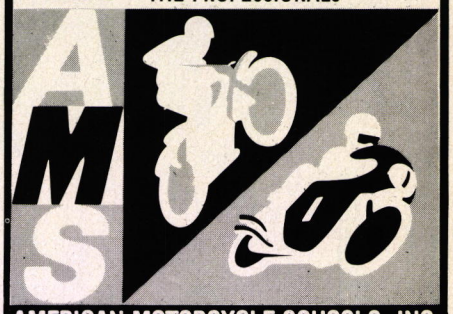

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The gate dropped and Honda's Donnie Hansen and Chuck Sun broke for the lead, trailed by Barnett. Hansen was dispatched in the third turn as Sun and Barnett sailed up and around the Coliseum peristyle, past the pits, and launched themselves off a 60-foot drop back to the stadium floor. There were two quick turns, some whoops, the backside straight, three turns split by a small hill and then—the sand pit.

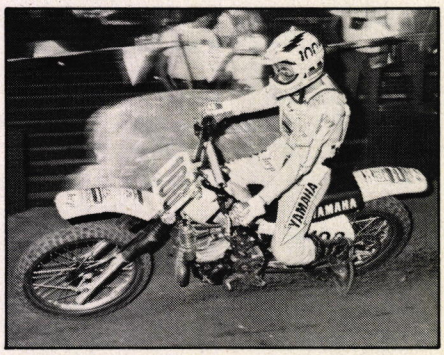
It was no more than 20 feet long, with a short jump at the end which led into a left-hand sweeper feeding into the front straight—the longest and fastest on the course. Sun led into the pit and bobbled momentarily as his front tire dug in. But Barnett was too far behind to take advantage, so he filed away the knowledge and dogged Sun's rear fender as the pair began to put distance on the pack. One lap passed, then two, and on the third lap it happened.

The move was quick, precise. No more than a feint to the right in the sand pit, moving Sun to the outside of the jump and the oncoming lefthand sweeper, followed by a switch to the inside line faster than an eyeblink and a powerful drive by Barnett down the straightaway into the lead.

It was over. There were 17 laps left, and one race to go in San Diego, but the 1981 Supercross series was over. Barnett was in the lead, picking up one second per lap over Sun, the field stringing out behind him feeling

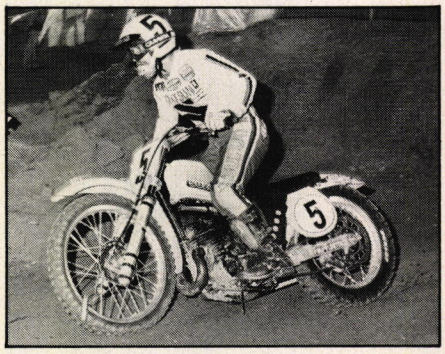
Howerton was often injured and sometimes ill at the stadiums

But style, he's got style.



Hannah is back, but a bit off form

Next year, Bobby, next year.



Barnett's no stranger to pressing

But his Suzuki's supposed to float.

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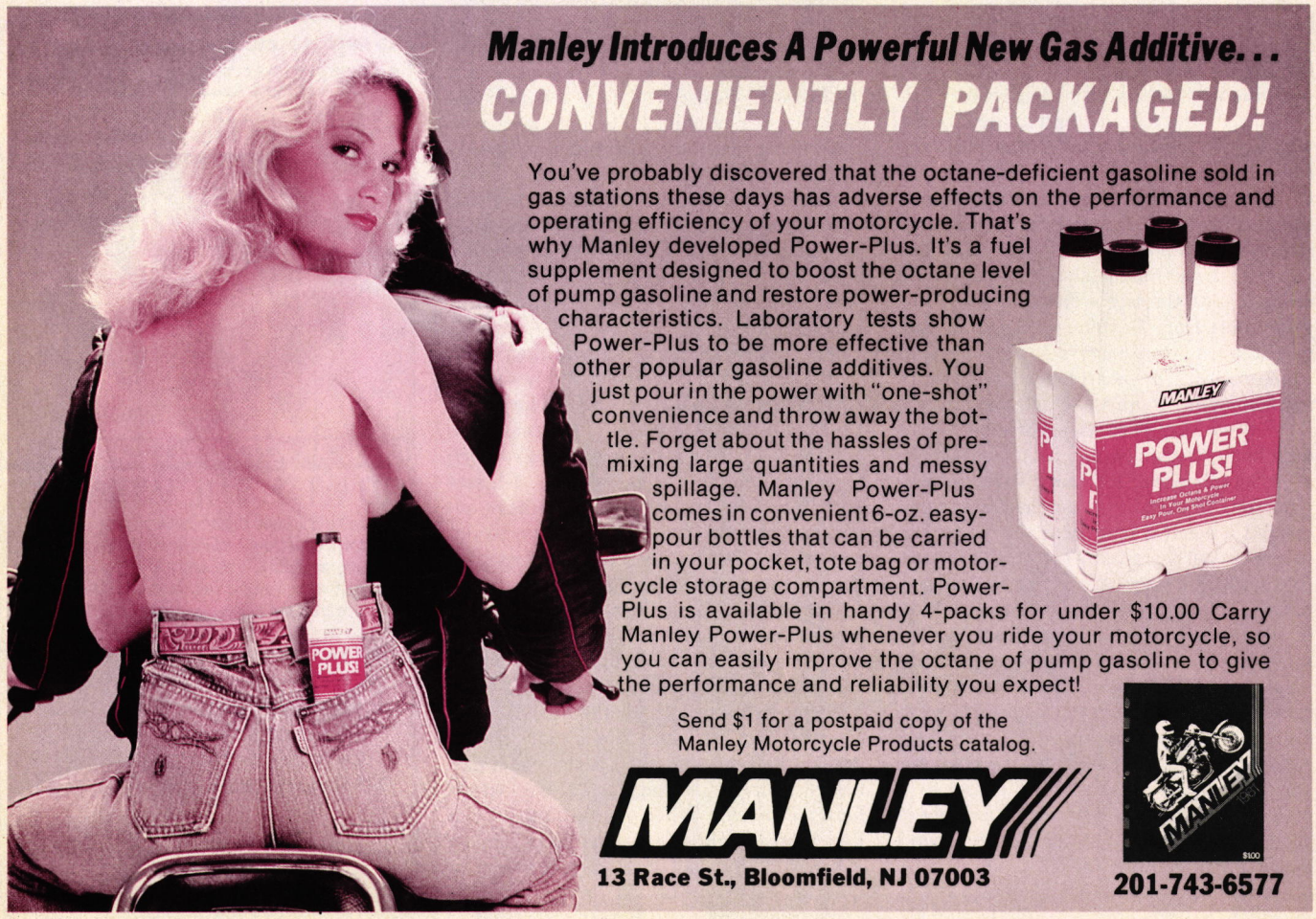
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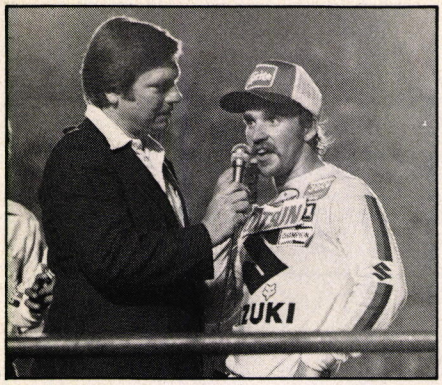

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How do you do it?

I guess it's in my blood.

every bit as beaten as they had at five previous occasions during the year, and it was over. Barnett took the checkers and the championship and the crowd of 61,536 went home, as stunned as the rest of the riders at the ease of the victory.

Two weeks later, Barnett was able to discuss it somewhat. "I've thought about that move I put on Sun and even now I can't explain it," he said. "It's experience, maybe. I was hounding him, he had slipped in the sand pit before—but he really didn't when I got him. It's just natural, I guess.

"Maybe this is it," he continued. "When I started out racing in the fields with my friends—I was 10 years old then—I always wanted to win. It's been my attitude since I started, so I guess it's natural. I don't like to lose. I'm a sore loser. I give it 100 percent, and when I get in the lead all I can see in front of me is the checkered flag.

"I always go for the biggest lead I can get," he concluded. "When I've got the other riders down I want to stomp 'em. There's no way anybody's going to beat me when I'm in the lead. You've got to have it in your blood."

—Jeff Burtt

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A new trick tried at Superbowl

Barnett won, anyway.

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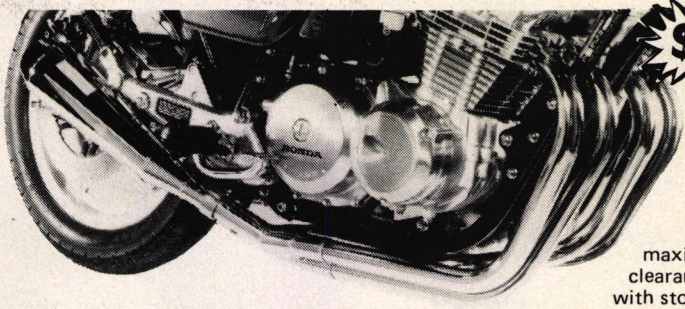

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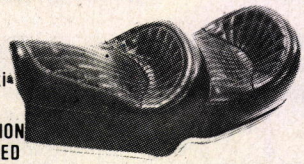

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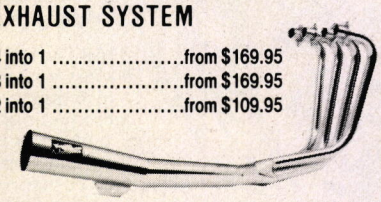

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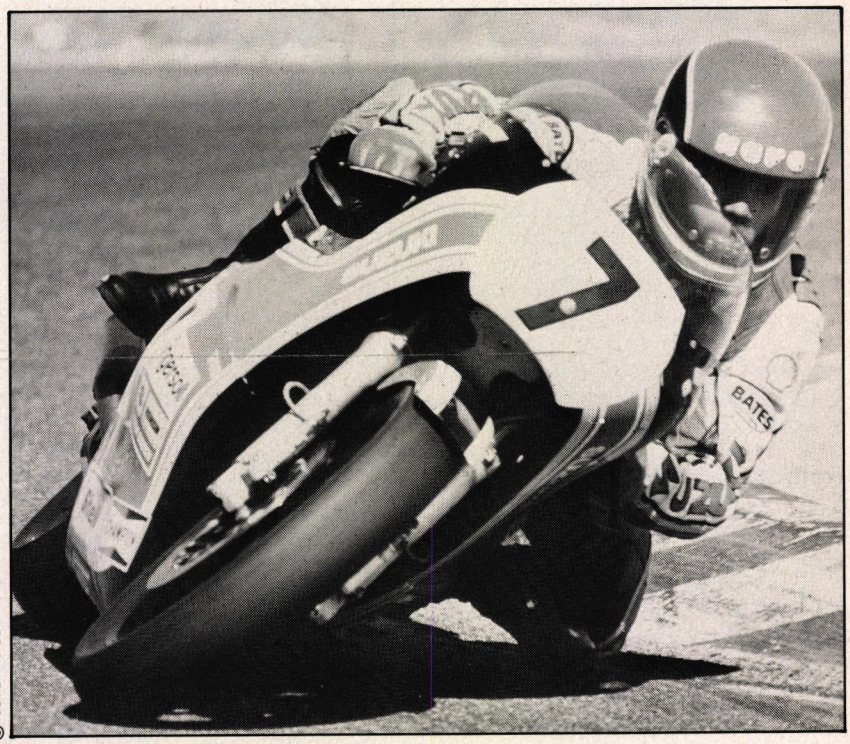
Winners & Losers

Mamola Wins Laguna Seca

And Spencer and Roberts DNF. That's Hollywood!



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Strafing an apex RG500-style

Mamola Nava faltered at Laguna.

• The Laguna Seca show was supposed to feature Kenny Roberts on his factory inline four Yamaha. Billed as co-stars were Randy Mamola on last year's Team Suzuki RG500 square-four and Freddie Spencer on the Honda NR500 vee-four. But something happened on the way from the casting office to the cameras.

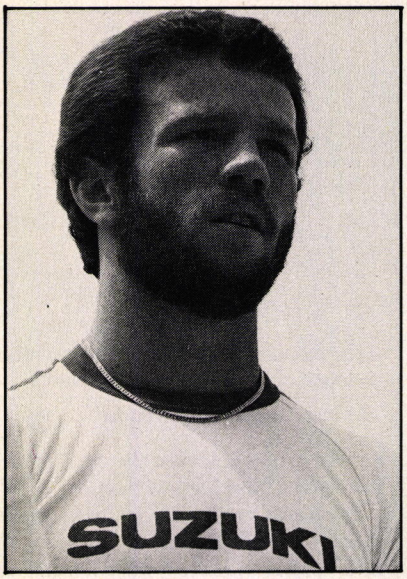
As a preview for the big race, Spencer and Roberts finished one-two in the first qualifying heat on Saturday afternoon. But it wasn't the star whose name appeared on the top of the marquee for the main, it was Spencer's. The lanky Louisianan put his screaming 20,000-rpm NR500 on the pole. It was a moral victory for Honda, as the NR has been playing the role of ratings loser at roadraces ever since it debuted at Silverstone in 1979. The second qualifying heat was a one-man show by Randy Mamola. What could he expect racing bit players?

The main fizzled after lap five. Spencer dropped out with engine trouble, and Roberts pulled in to visit Kel Carruthers and company, complaining of handling problems. Spencer said the NR's engine got slower and slower, while Shoichiro Irimajiri, Honda's chief engineer and designer of the oval-pistoned complexity simply said, "valve springs." English translation: "Don't ask."

The show's drama concluded, Mamola went on to win the first 100-kilometer heat. However, as consolation for the record crowd—estimate for the weekend was 40,000—Wes Cooley kept Mamola in sight, even though he was at a clear disadvantage steering his heavier F1 Yoshimura/Suzuki 1000 through traffic chasing Mamola's lighter RG500. Cooley's ride even surprised Mamola; several times the factory rider looked back and shook his head, amazed to see Cooley still within striking range.

The second heat was a near replay of the first, only this time Spencer and Roberts started from the back of the second wave. Spencer, having watched six Japanese mechanics change engines during intermission, still couldn't find the speed that helped him win his heat the previous day, and dropped out again. It wasn't confirmed, but you can guess that it was, once again, "valve springs."

Roberts didn't have valve springs in his



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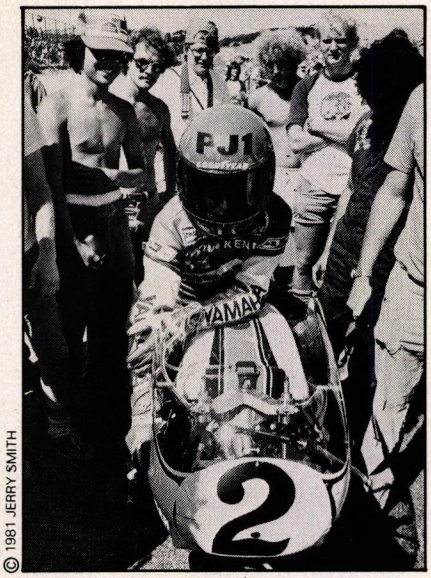
Suzuki thinks Randy is dandy

The future King?



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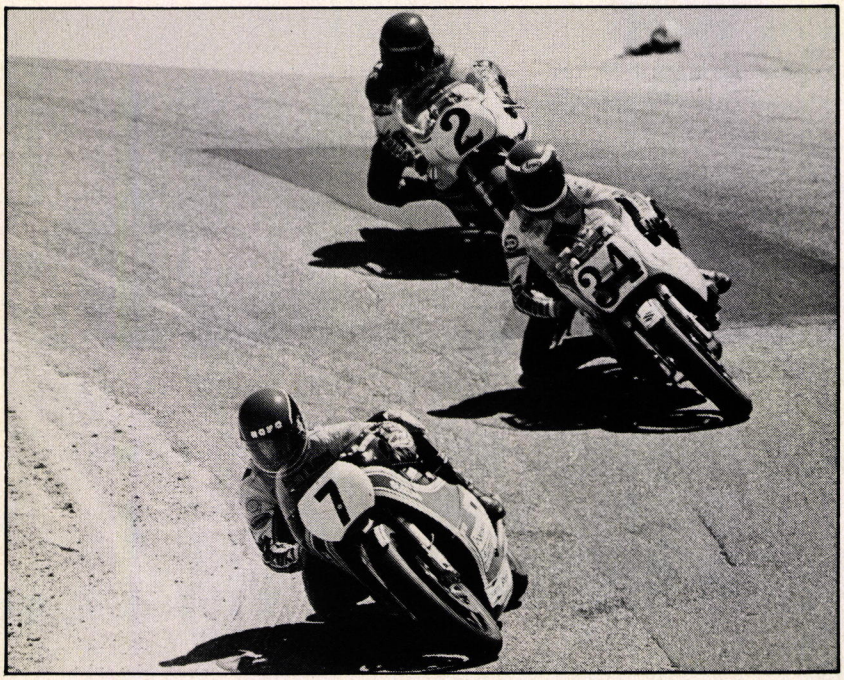
Roberts is down this year

But not out, says the crowd.

two-stroke to slow him down, and he perservered, knifing his way through the entire second wave by the end of lap one. Exiting Turn Nine, he was mingling with the first-wave back-markers, and was seventh overall by lap five. After the eighth go-round, though, Roberts joined Spencer in the boneyard. He said later that the clutch was finished: "Those 500 clutches are delicate—good for about one start a day, I guess." The next obvious question: Could Roberts have caught and beaten Mamola in the second heat? "It's easy catching someone. But to pass and lead—that's the hard part," said the King.

So Mamola and Cooley made it one-two for Suzuki, while Rich Schlachter and John Bettencourt made it three-four for New England. Laguna Seca's a long way from the East Coast, but as Bettencourt said, "I like this track. It's hard to pass on it, sort of like Loudon. It's a long way to come for a National, but I like it."

So does Eddie Lawson. He put on the real show of the weekend by pacing his Kawasaki Superbike to a win on Saturday. It wasn't a joyride, either, Lawson had to resist challenges by the two other



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Randy (7) led Cooley (34) and Kenny (2) with Freddie just appearing

At the end of the race, only Wester and Mamola were around.

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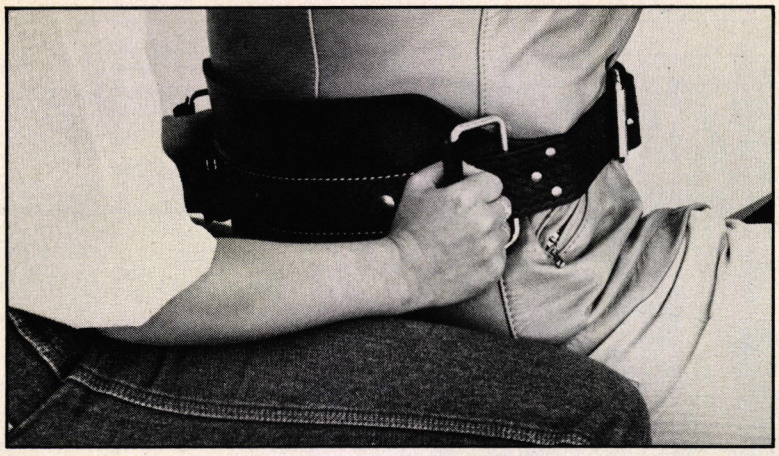

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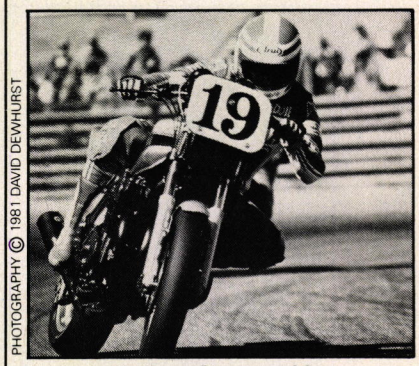

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A touch of oil got Spencer sideways

It's not an F1 bike, Freddie.

top Superbike riders in the country: Wes Cooley and Fast Freddie Spencer.

Cooley had support from his new teammate, Gennady Liubimsky, and Spencer had Spencer—Mike-type, no relation—and Roberto Pietri as back-ups. Lawson stood alone in the Kawasaki pits. The quiet rider from Ontario, California seems to prefer being by himself, though. So much that he led off the line and remained up front the entire 26 laps. F. Spencer and Cooley badgered Lawson in the early laps, but couldn't pass him. Who won was incidental to the fans, however. What they witnessed were three distinct styles of Superbike riding: Lawson and his sixth sense for passing slower traffic, Cooley's sixth sense on a Superbike, and Spencer's sixth sense on any bike. These three riders made the price of admission more than worth it.

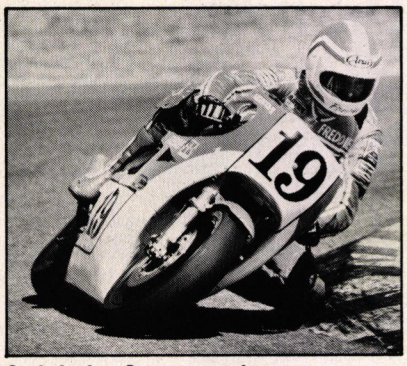
As the race developed, Spencer dropped back to third because of an oil

Laguna's best action was in Superbike

But Hollywood turned Lawson down.

Cooley gave Lawson a good luck pat

Lawson won, so that was that.



Curb feeler, Spencer-style

There's Arai way and a wrong way.

leak caused by scraping the leftside cover. According to inside sources, he forgot he was on the more cumbersome Superbike, not the NR500, until it was too late. Cooley remained a little closer to Lawson throughout the race, but he, too, had a small problem with his oil plumbing, caused by a faulty gasket. The crowd didn't care; the racing was spectacular.

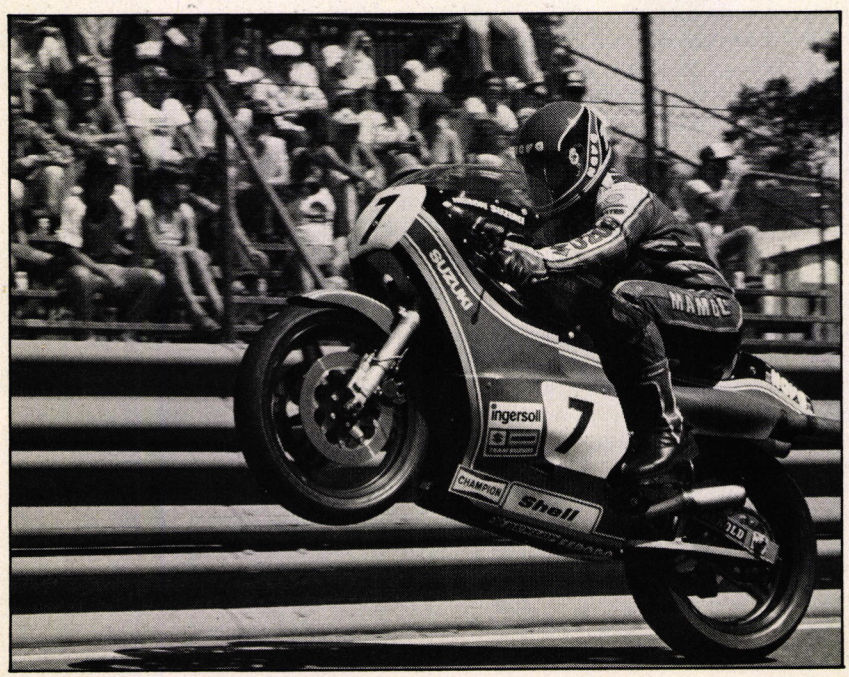
Lawson returned Sunday morning to win the Expert Lightweight race aboard the Kawasaki belt-drive 250, and in the process won the 250cc roadracing championship for the second year in a row. Commented an official from Kawasaki after Lawson's double, "Now I know how the Suzuki guys feel after a motocross."

If the AMA officials would understand how the fans feel after a Superbike race, maybe this class would be elevated to main event status. Because that's where the real racing takes place, not F1. Sure, it's fascinating to see three factory 500s on the grid (even though two of them were last year's bikes, while only Spencer had the latest from his team garage). But as can happen with a slim field (three bikes, plus the normal dull F1 bit parts) one or two can run into mechanical trouble, as happened, and the show is over.

But in Superbike, not only are there plenty of machines in the field (this was the largest class of the weekend), but the top teams have reliability pretty much dialed-in to the speed factor. Consequently, the Superbike race is where the exciting competition takes place.

An obvious solution is to shorten the F1 National to a minimum distance and run the Superbike race in two heats, possibly one heat on Saturday, the other on Sunday. In any case, the AMA needs to re-evaluate its priorities. If it's stars and Hollywood that AMA wants, keep the same program. But if it's racing, go with Superbike.

—Dain Gingerelli



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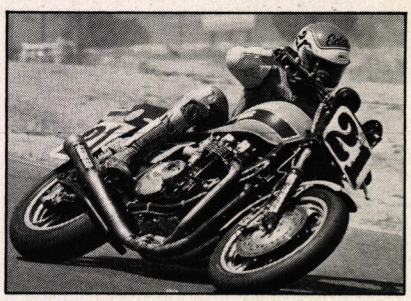
Pit Bits

• The Kawasaki that Eddie Lawson piloted to a Superbike win at Laguna Seca did yeoman duty the next weekend as Lawson and Ron Pierce teamed to guide it to a victory at the **AFM/Budweiser** Six-Hour endurance race at Riverside Raceway. The 1015cc workhorse completed 175 laps during the event, and finished either four or five laps—pending official results and the resolution of a protest over third and fourth places—ahead of the Team Hammer/Chevron/Vance & Hines 1170cc Suzuki. Rob Muzzy tuned the **Team Green** entry, his fourth wrench job for the factory since joining it three Superbike races ago. He has yet to lose. Manager Gary Mathers said "our only worry was trying to slow Eddie Lawson down. He's a **Superbike** rider, but we had to make the bike last for six hours so we were down to a max of 8500 rpm toward the end to save the motor. Ron Pierce's experience in **endurance** racing was invaluable—he's a real steady racer. We had good pit stops, too, and only had to change tires once. Everything else went the distance."



Slowing Eddie down was a problem

A six-hour Superbike race?

• Add Six-Hour: It was **Ron Pierce's** second straight win at California's biggest and best endurance race, and his first competitive event since a bad get-off at Japan's Suzuka track a year ago.

• At Suzuka, incidentally, an eight-hour roadrace was run the same day as the AFM/Bud event. Dave Aldana and Mike Baldwin were the winners at the Japan classic, riding a Honda France-sponsored **RCB1000** endurance racer.

• Spain's Ricardo **Tormo** has clinched the FIM **50cc** World Roadrace Championship, with five straight GP wins. It was the second title that the 28-year-old has won for his country's Bultaco factory, and since the tiddler class will be upped to 80cc in 1983, there's only one more 50cc crown to be had. Tormo's **mastery** of the class earned him the unofficial honor of first champ crowned by the FIM in 1981.

• Last Add Six-Hour: Before the Riverside race, Pat Hennen made a special—and much appreciated—appearance, donning his old Team Suzuki leathers and riding up and down the front straight for the crowd. **Hennen,** survivor of a catastrophic crash at the '78 Isle of Man TT, took much-deserved plaudits from the crowd and appeared more than happy at the reception.

PHOTOGRAPHY © 1981 PATRICK BEHAR

Only Hennen knew the thrill of returning

He was welcome back.

• Gregg **Hansford's** future is anything but clear. The Australian ace, injured early this season at Imola, Italy and then re-injured at a comeback race at Spa in Belgium, will not recover from a broken leg and cracked hip in time to compete at any of the remaining FIM 500cc roadrace events. And his sponsors—Team Kawasaki Australia—are packing it in, as they say, rather than replacing the **ailing** star this late in the game. Hansford's Spa mishap was the result of his taking an escape road after running out of brakes in the rain, and colliding with an official's car that was parked **illegally** in the safety shunt. The FIM had no comment on why the car was inappropriately, and unfortunately, clogging up the flee-way.

• Further news from **Down Under** has it that TKA might not be returning to the world roadrace wars next year, since several high officials are concerned about the fiscal futility of chasing Yamaha and Suzuki over there with **money** that might be better spent selling Kawasakis in Australia. An ominous note for the future of the team was sounded with word that Hansford's two KR500s were already en route back to Japan, and that team manager Neville Doyle was reportedly in Europe arranging the **sale** of the team's two box vans and Hansford's motorhome.

• Fall is the traditional time for moto-racers to begin maneuvering and applying what leverage they've gained toward bigger-buck factory contracts, and New Zea-

land's Graeme **Crosby** has fired the first salvo of the waning '81 season. **Miffed** at his apparent Number Two status on the Suzuki team, behind his teammate Randy Mamola, Croz stated "In my contract this year it says both Randy and myself are equal, but so far that has not turned out to be 100 percent right . . . which is unfair because we are both in contention and should be treated equally." Croz conveniently neglected to mention Italian racer Marco Lucchinelli, the current leader and probable champion of the 500cc roadrace class, who also rides a Suzuki and will undoubtedly figure somewhere in Suzuki's plans for 1982. Crosby also stated that there was **no way** he would consent to an Isle of Man appearance clause in his '82 contract, whatever factory he rides for. "I'm fed up with all the (expletive deleted) and . . . certainly I will not have a clause in any contract I sign at the end of the year saying I must go," the formerly personable Kiwi said. In fairness to Crosby, this is the time for the sound and the fury—most of it signifying only ambition—and the tremendously talented Formula One and FIM roadracer will surely land a competitive ride next year, most probably with Suzuki. More will be heard, from many others, as the factories jostle their tender for talent.

• The Rider's World Series, now called the **Winter Cup,** appears to be in trouble yet again. Masterminds Jody Schecter and his British partner Robert Fearnall (manager of Donington racetrack where the first round of the series is to take place) are having **problems** securing other venues. Apart from Donington, only two tracks have committed—Imola in Italy, not a rider favorite; and Kyalami in South Africa, certainly an unknown quantity for most of the GP set. The original plan called for additional rounds at Watkins Glen in the U.S. and the Suzuka course in Japan, but as of this writing neither are confirmed. It was also thought that at least six events would be necessary to elevate the Cup to world-class status—the level it needed to achieve in order to attract TV sponsorship, an avowed aim.

• Amsterdam's Olympic Stadium will host an American-style **Supercross** event early this September. The race, sponsored by Yamaha and Camel, is expected to fill the 50,000 seat arena according to promoter—and 500cc GP competitor—Gerrit Wolsink, no stranger to his **Dutch** countrymen's moto-tastes. Riders from eight countries, including the U.S., have been invited to compete. Headlining the event are current 500cc World champ Andre Malherbe, 250cc titleist Georges Jobe, and 125cc crown-holder Harry Everts.

• As **FIM** rider's representative, Wolsink is making other **news.** Following a controversy over the exclusion of former World

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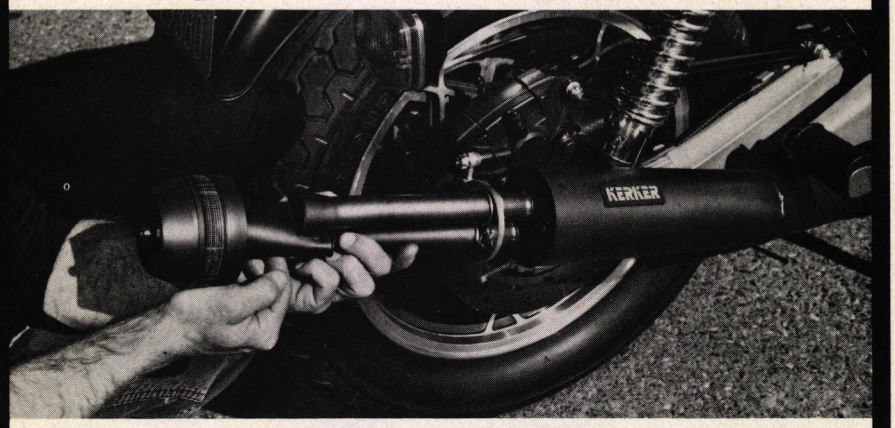

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Two bottles, three straws and duct tape

If he only had some Campari.

champ Gennady Moiseev from the riders allowed to compete at last May's Italian 250cc motocross Grand Prix, Wolsink has come up with a plan concerning GP qualifying that he wants to submit for FIM approval. The **scheme** would allow no more than four riders from any one country to compete in any single GP class. Further, only the top ten finishers from the previous year's GPs would be exempt from qualifying at any particular GP. Wolsink hopes his plan will alleviate start-line hassles that arise when too many home town boys are invited to compete at their country's GP round.

• Stranger Than Fiction File: Italy's Michele **Rinaldi** showed up for the 125cc USGP at Mid-Ohio Moto Park with what has to be the trickest jury-rigged Gatorade setup yet seen. Two vials containing, we are told, water were **duct-taped** to his helmet. They both fed into a common rubber straw which was taped to Rinaldi's mouthguard. He used it in the first moto at the GP, but in the second it was discarded. Not because it didn't work; it was **raining** so hard during the second heat that all any rider had to do was open his mouth for refreshment. Rinaldi's Gilera was water-cooled as well, but the bike's plumbing was a bit more sophisticated.

• Bol d'Or Update Dept.: Reported entries of **turbocharged** Hondas at the September 19–20 running of France's 24-hour endurance race have been finalized. Four CX500 Turbos—punched out to 650cc each—will be campaigned at Bol d'Or by Honda's French distributor. Riders weren't **announced,** but Ron Haslam was seen riding a stock CX-T as a pit bike at the Isle of Man. Haslam is Honda GB's endurance rider.

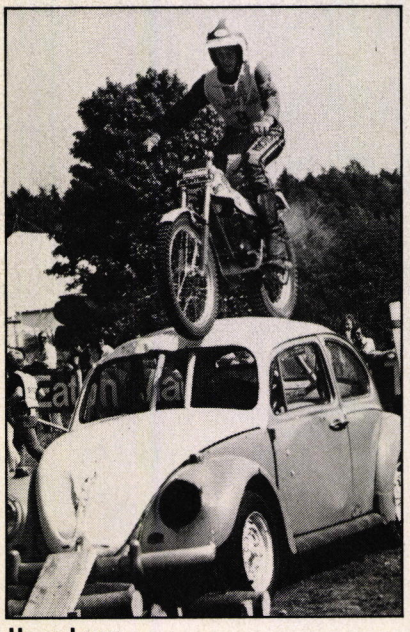
• Add Bol d'Or: Not only is the FIM into **futurethink** with the sanctioning of tur-

bos, they also reportedly will allow a Brazilian team to compete at Bol d'Or on machines powered by alcohol fuel. It is not known whether methanol or gasohol will be used, but Brazil instigated a plan last year to free the entire nation from petrochemical transportation by 1990. Both Mercedes and Ford Motor Co. are geared up to produce **alcohol-burning** vehicles for Brazil within the timetable.

• Final FIM Folderol Dept.: The Fall Congress meeting promises to be an interesting one for the FIM. Among items on the docket is a **controversial** plan to ban all two-stroke roadrace machines from 250cc on up because they bear no resemblance to anything the manufacturers **market** to the general public. Bet there'll be some arm twisting, ear bending and mat wrestling over that one.

• England's Neil Hudson, in second place on a Yamaha in this year's 250cc motocross GPs, is going to the mat with his former employer, Maico. You'll recall that Hudson tried to jump to Yamaha last year even though he was only halfway through a two-year deal with Maico. In the ensuing **lawsuit,** the court ruled that the Maico contract was binding and that Hudson would have to complete it. Now Maico is suing to recover court costs, reportedly upwards of **$40,000,** which would, also reportedly, bankrupt the British moto-star.

• Curt **Comer,** currently atop the standings in the AMA Observed **Trials** Championships, recently took his Montesa to Britain for a TV Trials sponsored by a fork-lift company. Among the obstacles surmounted was this VW **bug,** just the thing you'd run across in a European stream. That's Incredible? •



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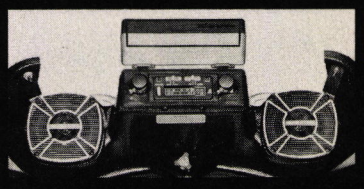

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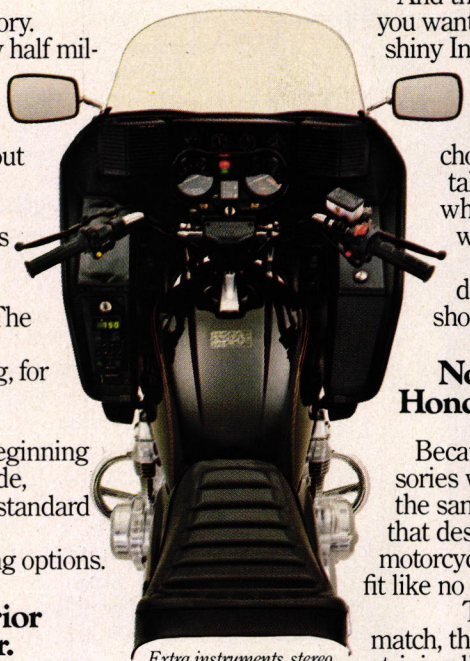
Now, at the beginning of its second decade, Honda raises this standard even higher.

By introducing options.



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This year, you can dress your CB750K for anything from cross-town commuting to cross-country exploration.

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Start with Honda's unique frame-mounted injection-molded fairing. It features integral turn signals, an adjustable wind-screen and a look that says the 21st Century is right around the corner.

Which is only reinforced by the quartz analog clock, the altimeter, the digital stereo or any of the other instruments you can fill it up with.

Then choose from different ways to carry your luggage. Including luggage racks, travel trunks, racks and backrests, saddlebags or various combinations of the above.

Then decide whether you want your luggage finished with a pebble grain or color matched to your bike.

And then, whether or not you want the added dazzle of shiny Interstate™ mirrors or a gleaming engine guard.

With all this to choose from, it may take longer to decide what you want than it will to put it on.

But then some decisions really should be savored.

Nothing fits a Honda like Honda.

Because these accessories were designed by the same company that designed your motorcycle, they fit like no others.

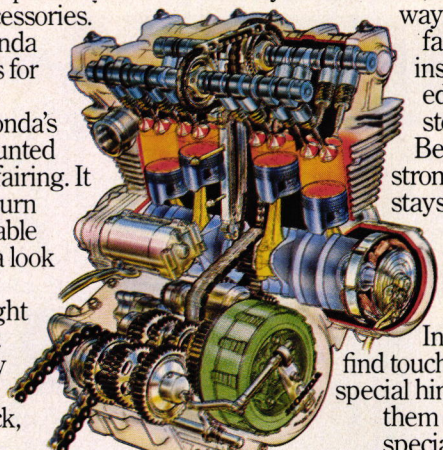
The colors match, the striping lines up, and they bolt on without being forced on.

But the way they fit isn't just cosmetics, it's also the way they work. The fairing, for instance, is molded from ABS plastic instead of fiberglass. Because ABS plastic is stronger and stays handsome longer.

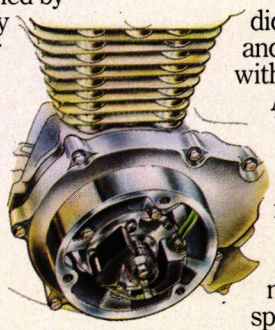
All luggage components are designed to lock on securely and detach effortlessly. Inside the bags you'll find touches like tie down straps, special hinges that make them easier to pack and special gaskets to seal them from the weather.

Outside, you'll discover a level of hardware and craftsmanship destined for a long life in the fast lane.

Because at Honda, high performance doesn't just apply to motorcycles.



This is the standard for performance and reliability in the 750 class.



Great bikes keep getting better. Transistorized pointless ignition.

It also applies to everything you put on them.

As standard equipment goes, it's a very high standard.

But don't let what goes on the CB750K make you forget how it goes.

This motorcycle is a direct descendant of Honda's first four-cylinder superbikes. And in every year since its introduction, it's been reworked, rethought and lovingly refined.

Along the way, 16 intake and exhaust valves replaced the original 8. For better engine breathing.

Likewise, it received Honda's exclusive Pentroof™ heads. For higher combustion efficiency.

Transistorized ignition did away with points and the maintenance that goes with them.

Air-adjustable forks and Variable Hydraulic Damping™ shocks made its ride more comfortable.

And constant velocity carburetors made its response more responsive.

If all this seems like a lot of changes for what everyone thought was a great motorcycle, don't worry. That's how a great motorcycle stays that way.

Practice makes perfect applies to price tags, too.

While the engineering of the CB750K has been keeping ahead of the times, its price tag hasn't.

In fact, it's been falling behind.

If you compare the 1981 CB750K with other motorcycles in its class, you'll discover that it's possible to pay less for a motorcycle and actually get more.

Which not only makes the attractive CB750K even more attractive, it gives you a built in bonus.

With the money you save you can probably pay for your first accessory.

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LETTERS

Coptalk, Handspeak, and Money isn't everything.

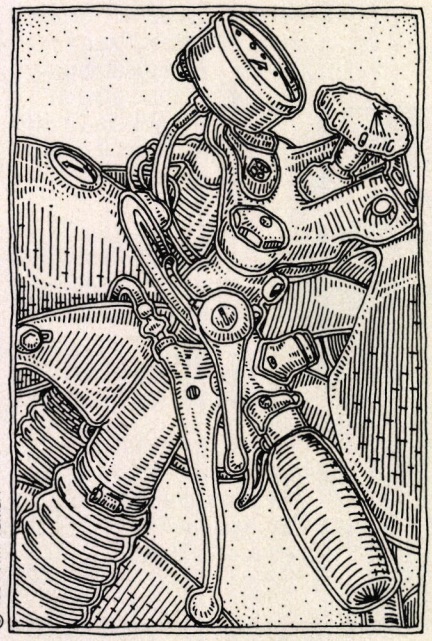
MOUTH TO MOUTH

In regard to Mr. J.J. Richter's "Euro Outrage" letter (*CG*, May '81), who does this jerk think he is? I can't understand why some people think that because other people have their own ideas about moto-sport that they can sit back and call those other people wimps and geeks, as it were. I don't know about scraping the floorboards on a Hog, Mr. Richter, but I'm sure that I could show you some tricks you wouldn't forget up on old Highway One in Northern California on my 750F. For your own good, pal, don't ever come out here loudmouthing about how great an asphalt jockey you are. You might get taught a memorable lesson.

Marc Henson
Eureka, California

XJ650 JET LAG

Please don't do it. Your mouth-watering description of the Yamaha XJ650 Eurobike in the November '80 issue kept my heart warm over the long, cold Canadian winter. Is it available? If not, why not? Can't you persuade the marketing men at Yamaha? If we cannot get it, please don't tell us what we're missing. If there is no hope, why tell us? Please don't do it.



© 1981 WM TOMSA

J.V. Ruparel
Oakville, Ontario, Canada

But it's our job, man. Read on—ed.

I just finished reading your choice magazine—February '81. We're two months behind here. I was very interested to see how many people fell in love with the XJ650, and wrote letters about your article, and thought they might be interested to know some of the XJ650's racing successes in New Zealand. We race stock machines here—no modifications allowed anywhere. The XJ just came in second in the 550–750cc class in New Zealand's richest roadrace, the "Castrol Six Hours." A CB750F won. An XJ650 here would set you back about NZ$4500, a lot of cash because we have basically the same exchange rate as the U.S. dollar.

When are you going to test Honda's new CB1100R? It's faster than the GS1100EX Suzuki, and outhandles it. Unfortunately, it is out of many a Kiwi's price range at NZ$10,000. It was good to hear you Americans have received the CB900F. I've ridden a couple and I highly recommend them. We first received them in early '79.

Steve Siegel
Whangarei, New Zealand

The CB1100R isn't here yet, and don't rub it in—ed.

Continued

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LETTERS

THE HOLE TRUTH

Good editorial in the July '81 issue on "Doing In The Double Nickel." I think one additional issue could be raised, and that is the fact that most highway-size bikes operate more efficiently at rpm that usually bring the bike up to speeds in excess of 55 mph. This rpm also produces the best gas mileage and longer engine life.

I was picked up for speeding coming across Iowa and went to court against a magistrate over the ticket. I argued the facts, some of them, that you mentioned—and also the fact that my cycle lugged at 55 mph. By presenting my case I hoped, in a small way, to educate the magistrate. Perhaps a good scientific and engineering argument before the law courts of the land could get results.

Larry Moll
St. Petersburg, Minnesota

So how much was your fine?—ed.

FINGER ROLES

I was intrigued by the editorial column on "Formation Flying" (*CG*, July '81). My brother and I decided that your "handspeak system" could be just the thing that we need when we take our Flying Wings out for a tour. Please consider elaborating on this system in a future column, or if the system has already been explained (or lampooned) in a previous issue of CYCLE GUIDE, direct me to the issue in which it appears.

Bob Passell
Madison, Wisconsin

Stealing signs has been tried in baseball, with little real success. Our system is personal and yours should be, too—ed.

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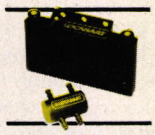

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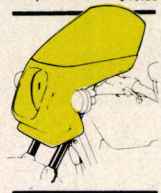

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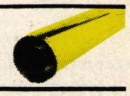

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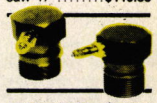

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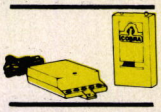

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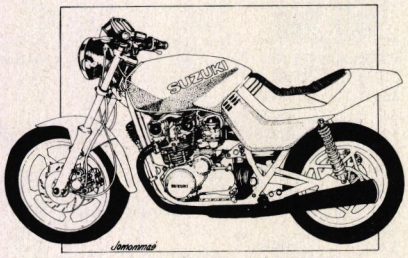
LETTERS

ROSE PROSE

I am a police officer. I have worked in Chicago the last five years and have an additional five years with various other police departments. I can only agree with your premise in "Seeing Red" (*CG*, August '81) that a person in or upon a red motor vehicle is more likely to be the recipient of a ticket. Having a red motorcycle is not, however, "probable cause" as you stated.

The problem lies in conditioning. All people have been programmed since infancy to notice objects with a red hue. The color red is a societal attention-getter. Fire engines, stop signs, danger signs, building exits, stoplights and ladies' lipstick are just a few examples. Being red, they command attention and in some instances require, by their purpose, a response. I suggest that anyone who is the operator of any conveyance subject to the vehicle code, and is the color red, must pay stricter compliance to the law as a result.



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As far as Dean's and Thompson's tickets are concerned, I cannot comment without personally talking with them and the issuing officer. But I can say something about *all* speed laws. Traffic laws are written "Malum Prohibitum." The Latin roughly translates to mean "strictly constructed." Traffic laws have no provision for a person's intent at the time of infraction (in contrast to criminal law). No mental state or process can be used as a legal defense against the strictly constructed vehicle codes.

Thompson may be allowed to increase his speed to get alongside of Dean, but strictly speaking he cannot exceed the posted legal speed to do so. Malum Prohibitum. By the way, when Dean admits in print that he observed Thompson's speed, he makes a great witness for the traffic cop. You're lucky that the courts have declared magazines and newspapers to be hearsay evidence and, as such, to be inadmissable in a court of law. I would appreciate your comments.

Kevin M. Savage
Chicago, Illinois

Hearsay, or otherwise?—ed.

Continued

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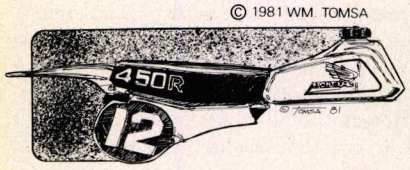
LETTERS

Paul Dean's editorial "Seeing Red" hit it right on the nose. I own a 1975 fire-engine-red CB400F, and every time I hop on it the excitement it produces is awesome. If you want looks, get one of these—they sure turn heads! I'm awfully glad my brother picked red over the other available colors, blue or yellow. The one point Dean makes I can't totally agree with is that I haven't received a speeding ticket yet. Knock on wood.

Scott Antonio
Oakdale, Massachusetts

Or test the Oakdale Police for monochromatism—ed.



POLICE FARCE

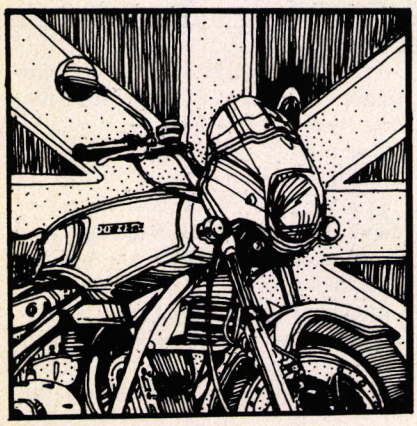
Hey, you guys are definitely crazy. This statement is in reference to your July '81 article "Hey! Watch This . . ." on the Honda ATC's.

I was in the patrol unit watching traffic at 3:00 a.m.—which is none—and was laughing continually about your staff's adventures on ATCs. It really cracked me up about Gingerelli losing it only minutes after the initial "don't crash" course. I also loved the way you lured those poor suckers into those bottomless dunes.

Anyway, good article. You made me laugh and want to dig up the cash for one of those toys. That's why I'll remain one of your customers for quite some time. Keep your Fuzzbusters ready.

Officer D. Grindstaff
Fulton, Missouri

Don't need 'em in Fulton, we'll just send in an issue before we hit town—ed.



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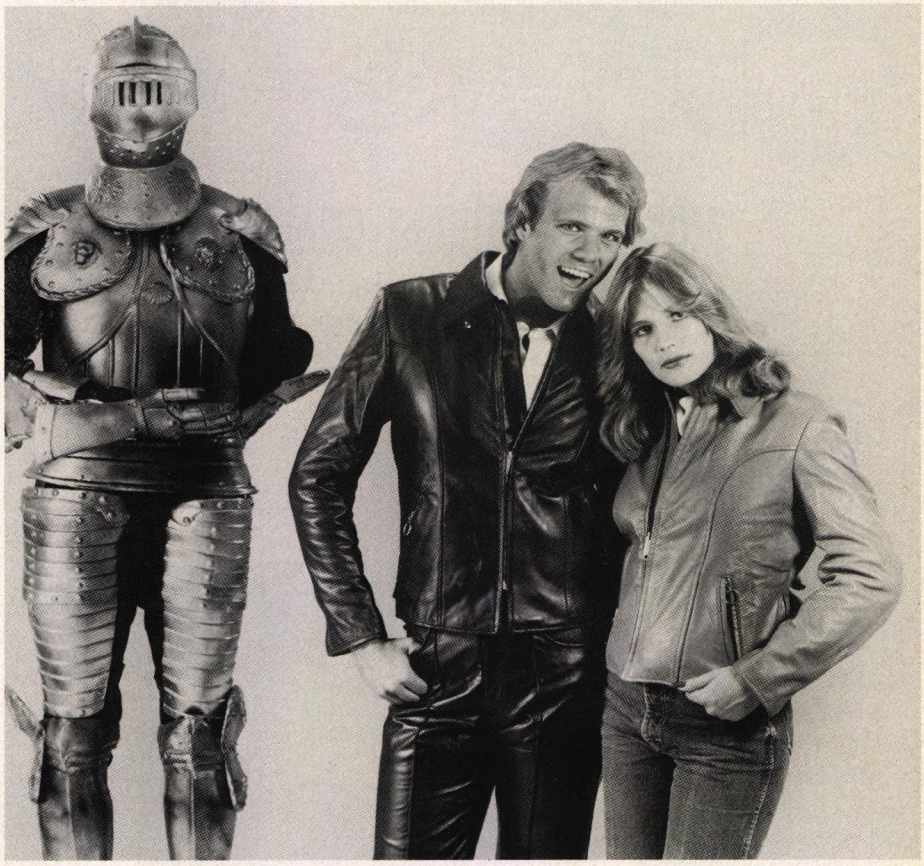
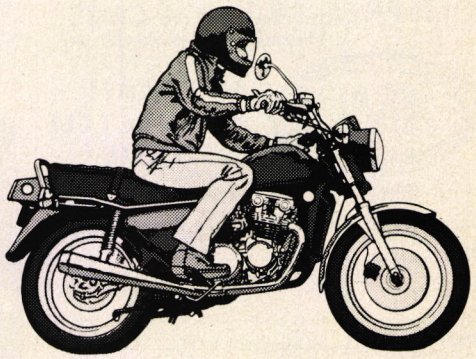
Continued

Leathers don't have to feel and fit like iron to wear like it. Experience ESPRIT



ESPRIT T.M.

RIDE AWARE



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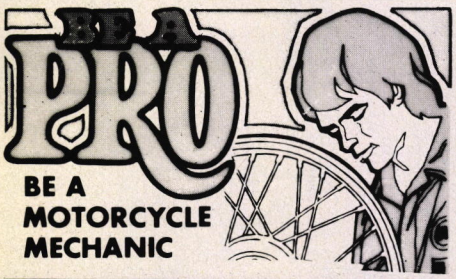

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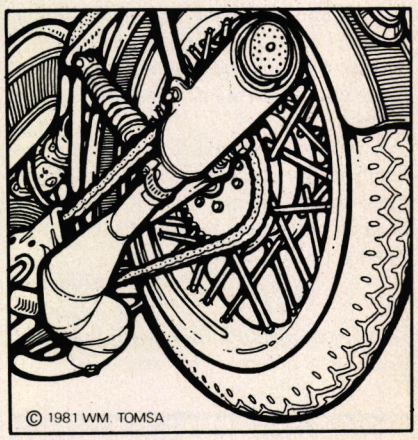
LETTERS

BIKER DOUGH

I read the letter sent to you by Mr. Sederholm (*CG*, July '81) which voiced his opinion that everyone riding a bike is somewhat impoverished. It may indeed be that very few do in fact differ from his stereotype, but when Sederholm says that I shouldn't be reading CYCLE GUIDE because I don't fit the mold, I must respond.

Yes, my income does exceed his idea of a high salary. I now drive Corvettes instead of the Mercedes I sold because it was less than reliable. I go to Palm Springs when I want, I live where I want and buy the motorcycles I want. I am currently selling a bike with 1500 miles on it to make room for my new GPz1100, and if I had wanted another bike I would have bought it with little regard to the price. Remember, all things are relative—and I am sure that this is the message CYCLE GUIDE was trying to convey—so come on, let's start recognizing the fact that bikes make great toys and some people can spend more on their toys than others. One does not have to agree with every decision everyone else makes, but they must respect the right to make that decision—even if it's spending $7500 on a motorcycle.

G. Kimball
Santa Monica, California



I thought your CBX vs. R100RS comparison in the May '81 issue might provoke some outrage from your readers, and so it did. I own a 1977 R100RS and would like to comment.

I cannot afford expensive cars or homes, but a BMW I can manage. And since I regard motorcycling as a fairly serious hobby, I find my BMW gratifying and a bargain to boot. For many reasons, it's a motorcycle I can't afford to be without. Surely, relying on a motorcycle that has extensive safety and handling margins built-in can be most reassuring and perhaps even lifesaving.

Continued

LETTERS

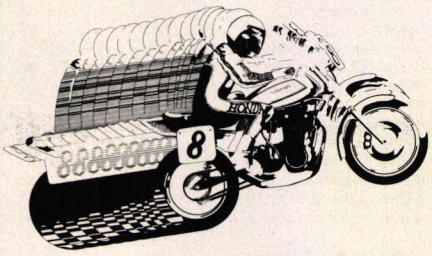
The CBX is engineering at its best and marketing at its not-so-best. 24 valves, whirring Hy-vo chains, stylish-but-absurd travel cases and tank decals do not necessarily make a GT bike. Would a $7500 Honda have more cylinders, valves, etc., or would it start to attain the marriage of form and function that BMW has? Then maybe Japan will end the dispose-a-bike syndrome and create a machine of lasting value.

It will be interesting to see if the CBX survives its current touring niche. It's a stunning machine, but I'm not about to part with my RS. The next time I've been on the road 500 miles and I have a mountain pass and 50 more miles to go, I'll smile and look forward to a good night's rest and the next day's ride.

Bruce E. Anderson
West Linn, Oregon

TWINS TYPE

Congratulations. Your feature on the "Battle Of The Twins" (*CG*, August '81), was the best article on that series I've yet to read. The piece really brought into focus some of those dark and ominous intimations that sometimes loomed like



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thunderheads in my conversations with Jess O'Brien at races during the last several months.

I would be remiss in my duties, however, if I did not point out that Bob Fairburn Racing Inc. is the owner of John Long's #8 BMW currently leading the Twins series in Modified Production Expert; or that Roger Hutchins has the imprimatur of Udo Gietl in tuning the grand old war horse. Udo, incidentally, must be too used to hearing his first name massacred in polite conversation to be subjected to viewing his last name spelled "Geitel" twice in one article. Perhaps someone on your staff should have his MOS expanded to European Names Editor?

All we need now that the enthusiastic Messrs. Cathcart and Burtt have our Twins credits down cold is more race coverage. This series is turning into a real old fashioned, er . . . rumble.

John M. O'Connor
Skowhegan, Maine

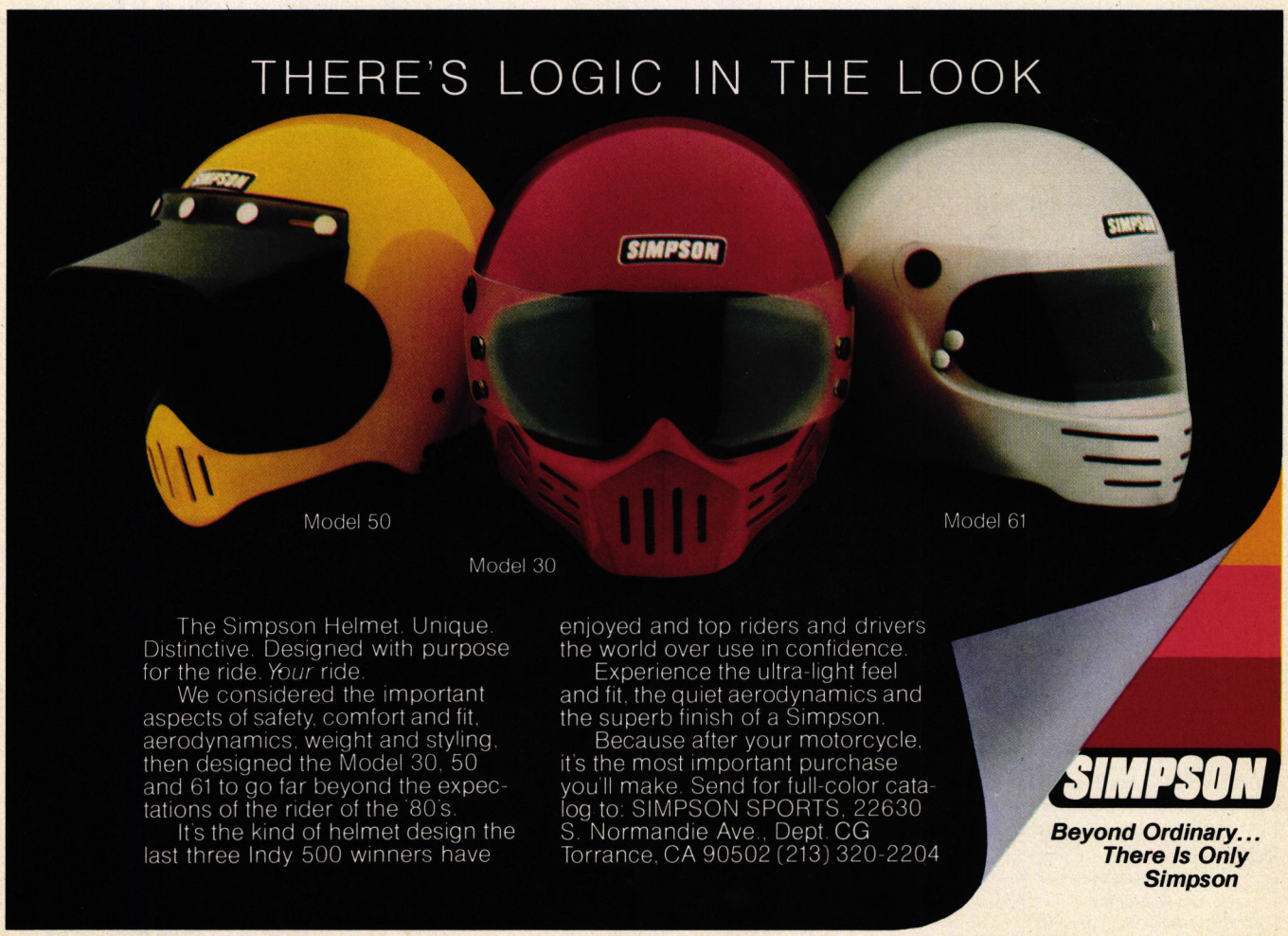
SHIFTY CHARACTER

Gentlemen: Twice in your test of the Yamaha IT465 (*CG*, May '81) you reminded us how great automatic transmissions are for off-road riding. Admit it! You *loved* the Husky 420AXC you tested last October, even though you panned it. Back then I wrote you a letter, and now I'm going to send it.

Dick Brass
Butte, Montana

And now we're going to print it—ed.

Address correspondence to LETTERS, CYCLE GUIDE *Magazine, P.O. Box 6040, Compton, California 90224. Replies are not possible except in this column. Letters may be edited for clarity and brevity. We will print as many letters and replies as space allows.* •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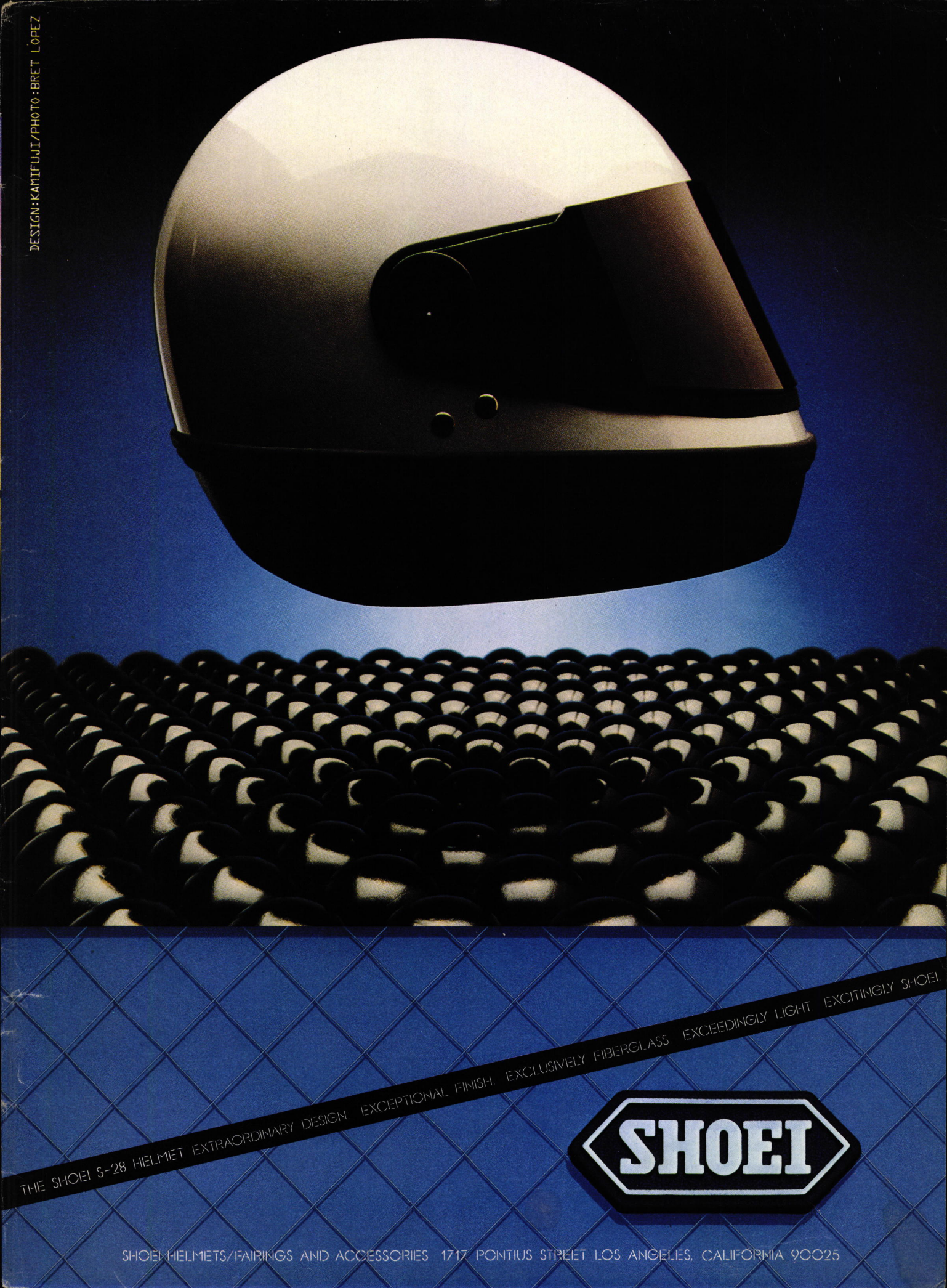
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